SECURING ALL EXITS: Laid-off workers can endanger your business. Take these protective steps before issuing pink slips. **PAGE 30**

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5 RECESSION SURVIVAL SKILLS

Tough times call for new talents. Are you ready? **PAGE 20**

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Inside

MARCH 2, 2009
VOL. 43, NO. 9 $5/COPY

News Analysis

Updated BlackBerry software could give IT execs a reason to take a second look at smartphones. PAGE 12

Steve Ballmer is still willing to spend some of Microsoft's money – if it gets him more market share. PAGE 16

THE GRILL: **Information architect Alex Wright says there are lessons to be learned from IT history.** PAGE 17

Opinion

Technology alone won't get us out of the recession. PAGE 4

Careers

How to keep your IT job when people all around you are losing theirs. PAGE 37

Don't Miss . . .

CIOs may someday add 'energy czar' to their job descriptions. PAGE 26

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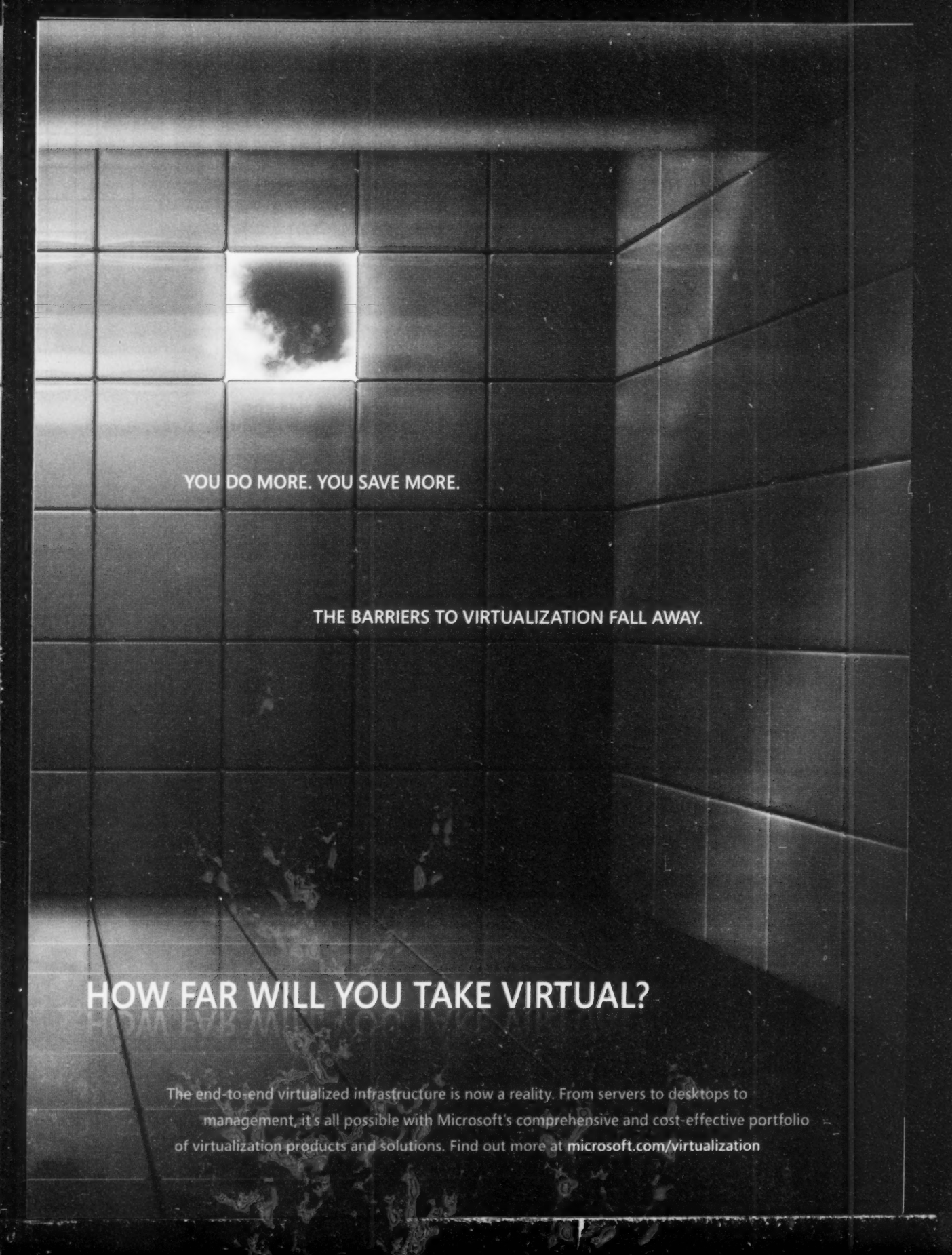
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Inside

COMPUTERWORLD ■ MARCH 2, 2009

■ NEWS DIGEST

6 Indian outsourcers top the list of **H-1B recipients.** | **Microsoft** says users who don't **activate Windows 7** on their PCs will get persistent **reminders** to do so.

7 Most **Oracle shops** don't require DBAs to use the vendor's **database patches.** | A third **security breach** at the University of Florida exposes data on **97,000 people.**

10 A Czech firm's **faulty network configuration** and a Cisco **router bug** briefly **choke** Internet traffic.

■ NEWS ANALYSIS

12 New Smartphone Controls May Appeal to IT Managers. Users and analysts say that RIM's updated software for managing BlackBerries could help allay IT's fears that smartphones can't meet corporate security requirements.

16 Ballmer Still Plans to Throw Money Around. Microsoft is cutting costs. But CEO Steve Ballmer is still willing to spend money to gain market share in key areas.

■ OPINION

4 Editor's Note: Don Tennant believes that technology alone won't be the springboard that gets us out of the recession.

19 John D. Halamka takes the "broken windows" concept from law enforcement and applies it to IT.

35 Paul Glen recommends trying to get the right mix of personalities when it comes to team-building.

40 Frankly Speaking: Frank Hayes says Microsoft's misguided attempt to take back money from laid-off workers is a sign of processes that can't adjust to circumstances.

■ DEPARTMENTS

17 The Grill: Information architect and writer **Alex Wright** talks about the lessons we can learn from IT history, the re-emergence of oral culture and all the data that Google doesn't index.

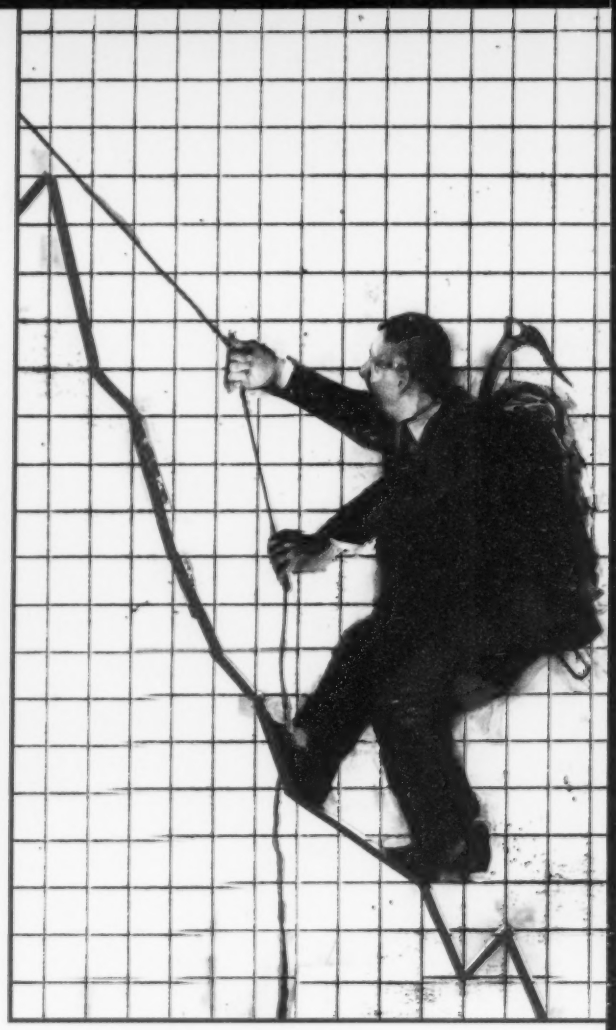
34 Security Manager's Journal: The Economy Takes a Toll on Security. As losses mount, more budget cuts are required, so J.F. Rice scrambles to identify ways to save money that don't involve reducing head count.

37 Career Watch: IT staffing executive Michael Kirven talks about what it takes to keep a job – or find one – in the current economy. And IT pay trends aren't universally grim.

39 Shark Tank: When the domain controller goes down, a pilot fish who works in a regional government office finds out what the word *bureaucracy* really means.

■ ALSO IN THIS ISSUE

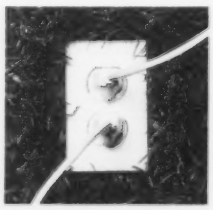
Letters	5
Company Index	39



■ FEATURES

20 Five Recession Survival Skills

COVER STORY: The talents that got you into that IT leadership role may not be the ones that will keep you there during this financial upheaval. It's time to recalibrate your leadership skills.



26 Power Struggle

Should IT managers add the title "energy czar" to their business cards? Google, Yahoo and other pioneers are exploring the options.

30 Securing All Exits

Layoffs can spawn destructive behavior in the people who have to leave. If you're thinking "Never at my company," think again. Then take these steps before the pink slips go out.

COVER ILLUSTRATION BY DAVID HOLLENBACH

Autonomy Dominates Enterprise Search*

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—*Computer Business Review*, November 2008

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* IDC, October 2008

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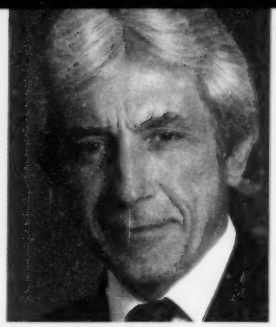
■ EDITOR'S NOTE

Don Tennant

Unwinding the Mess



WELL, I can't say I wasn't warned. After writing in a column last December about the destructive labels that are thwarting the closure of the racial divide, a reader in Maryland e-mailed me to say that I should "just stop with the racial discussion" or cancel his print subscription. He e-mailed me again on Feb. 19 to inform me he had called to cancel it himself after reading my interview in that week's issue with Earl Pace, founder of Black Data Processing Associates.

"I don't think this belongs in a *technology* publication," the reader wrote. His message was consistent with his December e-mail, in which he offered this rebuke: "Hey, let's rake up old hard feelings and waste a day talking instead of fixing computers. I'm sure you will solve the race issue with this discussion!"

The inference was that we should limit ourselves to writing about the technical information that IT professionals need to help them maintain their computer systems, and that dealing with people issues like race is a waste of time.

But there's a reason why our tagline is "The Voice of IT Management," and not "The Art of Fixing Computers." There's also a reason why the voice of some IT managers isn't adequately heard, and it has to do with a lack of appreciation for the nontechnology issues those managers are confronting.

The overarching issue is one I discussed in a column in December, when I noted that a common characteristic of this year's *Computerworld* Premier 100 IT Leaders is the strong appreciation they have for people. As Richard Wells, director of corporate IT at Syracuse Research Corp., put it, "Focusing on the right people first makes the technology come easy."

That point was underscored in a recent e-mail exchange I had with a group of IT executives from around the U.S. In discussing the economic situation, I asked them if any particular technology might springboard us out of the recession. What I gleaned from them is that if anything serves as a springboard, it won't be technology.

■ There's a reason why our tagline is 'The Voice of IT Management,' and not 'The Art of Fixing Computers.'

"It's going to take a lot more than technology to unwind this mess," said Stephen Byrne, a 2009 Premier 100 honoree and vice president of field and agency automation at Harleysville Insurance.

According to Thys Coetzee, an IT director in Eden Prairie, Minn., "Technology will assist in every recovery point, but it won't be the springboard." The catalyst, he said, will be services, "in the widest sense."

"Imagine cell phone services that actually help consumers; imagine airlines that make fliers feel welcome and assist them; imagine service contracts that people actually perceive as valuable, rather than as a threat from the vendor and a dangerous gamble," Coetzee wrote.

"Technology can remove impediments," he added, "but services are what will draw people out and encourage the economic wheels to turn." It's worth noting that Coetzee's emphasis wasn't on services performed by any particular technology, but on services performed by people.

This week, as we recognize the 2009 Premier 100 IT Leaders at our flagship conference in Orlando, I'll have the opportunity to continue the discussion with honorees like Chris Saneda, CIO at Virginia Credit Union. It was Saneda who crystallized the point that others made in that e-mail exchange. "Neat technology won't springboard us out of this recession," he wrote. "People will."

So to the reader who has no interest in discussing issues that enable us to better understand and appreciate the people we work with to fix those computers, my response is that canceling his subscription was probably for the best. The fact is, our print circulation is controlled, and the publication goes to only 165,000 qualified people. I'd rather his copy went to someone who recognizes that Earl Pace's voice should be heard. Those are the people who will ultimately unwind the bigger mess we're in. ■

Don Tennant *is* Computerworld's *senior editor-at-large. You can contact him at don_tennant@computerworld.com, and visit his blog at* http://blogs.computerworld.com/tennant.

The H-1B Program Is Affecting IT Education

Don Tennant must know that when he writes an editorial involving H-1B employment, he will get a firestorm of comments ["Better Than That," Feb. 2].

Maybe that is what he wants, but this is not a rant. Instead, I would like to discuss an aspect of H-1B hiring that is not often mentioned — IT education.

I have been teaching IT courses for the past 13 years. The drop-off in enrollments, beginning in 2001, has been remarkable.

Talking one-on-one with students, I have found that the prospect of losing a job — or of not being able to get one in the first place — because of competition from lower-paid employees both here and abroad is causing students to switch careers away from IT. And who could blame them? Working hard to earn a degree only to have the job market flooded by lower-paid employees is discouraging.

This indirect effect of hiring H-1B employees is one that doesn't get much discussion. Maybe it is time that it did, because we are losing the ability to compete technically with European and Asian countries.

■ **Danny Clarke,** *instructor, math and computer science, Truckee Meadows Community College, Reno, Nev.*

With 30 years' experience, I'd say the protest that employers aren't purposefully hiring H-1B visa holders for less money than Americans is disingenuous. I refer well-qualified colleagues to HR and see them dismissed without an interview.

The U.S. should let in foreign tech workers. But the visa fees should be increased to cover the cost of ensuring that salaries aren't lower than the local average by some nominal amount, say 5%. Firms that don't comply should be banned from the H-1B program for 10 years and pay a fine amounting to 100% of the salary in question. I know that the U.S. does not always have all the talent available that a company needs. But I want to ensure that there isn't a back door for cheaper labor that profit-hungry firms can exploit.

■ **Eric Kelley,** *senior software engineer, Austin*

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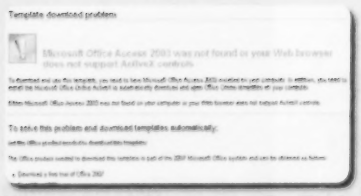


When Good Browsers Go Bad

Even in this day and age, Web pages still break all too often. Will efforts to standardize browsers help?

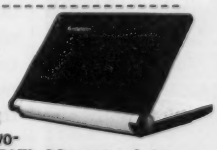
Who's Hiring H-1Bs

See a list of top users of H-1B visas last year. And check out our searchable database of all companies that received H-1B approvals in 2008.

7 Mistakes to Avoid When Applying for a Tech Job

Getting your résumé right will boost your chances of landing that interview.

3G Netbooks: Tomorrow's Cell Phones?



You can get a netbook for $99 if you buy a two-year subscription to AT&T's 3G service. Is it worth it? Brian Nadel looks at three options.

The Do's and Don'ts of Becoming an IT Consultant

Thinking of striking out on your own? Ex-CIOs share some tips.

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News Digest

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THE WEEK AHEAD

MONDAY: *Computerworld*'s 2009 Premier 100 IT Leaders Conference opens in Orlando. Also, the Demo 09 emerging technology show begins today in Palm Desert, Calif.

TUESDAY: CeBIT 2009, the world's largest technology trade show, gets under way in Hannover, Germany.

WEDNESDAY: Microsoft's MVP Global Summit, for members of its Most Valuable Professional program, concludes in Seattle with speeches by CEO Steve Ballmer and other execs.

CAREERS

Indian Offshoring Vendors Top List of H-1B Recipients

MICROSOFT CORP. was the leading U.S.-based recipient of H-1B visas during the federal government's 2008 fiscal year, getting approval for a total of 1,037 visas — up slightly from the number it received the year before.

But the four largest H-1B recipients were outsourcing and IT services firms based in India. And on an overall basis, their use of the controversial visa program also increased in fiscal 2008, according to government data released last week.

Topping the list (see chart below) was Infosys Technologies Ltd., with 4,559 visas, followed by Wipro Ltd., Satyam Computer Services Ltd. and Tata Consultancy Services Ltd. The number of visas issued to Infosys was identical to what it received the year before, but the other three vendors all saw their visa counts rise.

The overall number of IT jobs in the U.S. is declining because of the economic recession, according to an analysis of U.S. Bureau of Labor Statistics data by the National Association of Computer Consultant Businesses in Alexandria, Va. The NACCB found that IT employment declined by nearly 50,000 jobs in December, after falling by almost 34,000 in November.

Janice Miller, a city councilor in Oldsmar, Fla., said that workers from India continue to be brought in to work at a technology center operated in Oldsmar by The Nielsen Co. On the other hand, she said, "there are a lot of [local] people out of work."

Nielsen, which is best known for measuring TV audiences, began laying off some of its employees at the Oldsmar facility last year, on the heels of announcing a 10-year, $1.2 billion outsourcing agreement with Tata in October 2007.

The $787 billion economic stimulus bill signed into law by President Barack Obama two weeks ago restricts H-1B hiring by financial services firms that receive federal bailout funds. But those limits don't affect outsourcing vendors that provide IT services to the financial sector.

Srini Pallia, vice president of business technology services at Wipro, said his company will likely hire more workers in the U.S. if the restrictions on H-1B use are expanded. But, Pallia added, such restrictions may well drive companies that planned to keep IT work in the U.S. — even if it would be done partly by H-1B holders — to look offshore.

— Patrick Thibodeau

The Top 10 Employers Approved For H-1B Visas in Fiscal 2008

EMPLOYER	NUMBER OF VISAS
Infosys Technologies	4,559
Wipro	2,678
Satyam Computer Services	1,917
Tata Consultancy Services	1,539
Microsoft	1,037
Accenture	731
Cognizant Technology Solutions	467
Cisco Systems	422
Larsen & Toubro Infotech	403
IBM India	381

SOURCE: USCIS

OPERATING SYSTEMS

Microsoft Spells Out Windows 7 Activation

MICROSOFT CORP. will turn Windows 7's background picture black and display persistent notices if users download but don't activate the new operating system.

Alex Kochis, director of Microsoft's Windows Genuine Advantage program, said last week that users who don't activate the beta software "will receive persistent notifications, including a message from the system tray every 60 minutes" to "Activate Windows Now."

Most of the reminders are similar to ones in Windows Vista. But others appear to be new, including a notice that pops up when the Control Panel is launched.

Kochis said the reminders "could change" in the final release. "The beta isn't necessarily the final experience," he added.

– GREGG KEIZER

> **"You can change the plain black background to any background you choose, [but it] will reset to a plain black background every 60 minutes.**
> ALEX KOCHIS, MICROSOFT CORP.

SECURITY

SURVEY: Most Oracle Shops Don't Mandate Use of Security Patches

A LACK OF corporate mandates to quickly install Oracle Corp.'s security patches may be leaving many Oracle database installations exposed to vulnerabilities for extended periods of time, according to survey results released last week.

In a pair of online surveys jointly conducted by the Independent Oracle Users Group (IOUG) and Oracle between May and August last year, only 26% of the 150-plus respondents said their companies require the vendor's quarterly patch updates to be applied on all systems.

Another 6% said they are required to install the patches on critical systems only, the IOUG and Oracle reported. Meanwhile, 30% said their companies don't have any policies for Oracle's patches, while 32% said database administrators have to do risk or cost-benefit analyses to justify the patching of databases.

> "I think the feeling is that since databases are a little more isolated than the desktop, there's less of a [security] concern."
> IAN ABRAMSON, PRESIDENT, IOUG

In addition, the survey results showed that most of the respondents aren't keeping up with Oracle's patch releases. Only 30% said they typically install patches before the company issues its next batch of fixes, according to the report. Twenty-five percent said they were one update cycle behind, while 26% said they were off by two to four cycles. Another 11% said they hadn't installed any of Oracle's patches.

Oracle typically issues dozens of patches across its entire product suite as part of the quarterly updates.

Patching databases in particular is a complex task that can require months of labor and significant system downtime. But the fact that many companies haven't even set policies for dealing with Oracle's patches is startling, especially since databases are such important corporate assets, said Ian Abramson, the IOUG's president.

"I think the feeling in those organizations is that since databases are a little more isolated than the desktop, there's less of a [security] concern," said Abramson, director of the enterprise data group at Thoughtcorp, an IT services firm in Toronto.

Oracle didn't respond to a request for comment. But in a blog posting, Eric Maurice, the company's director of software security assurance, said that Oracle and the IOUG will work together to promote broader adoption of policies for deploying patches.

He also said that Oracle will "explore ways" to improve its patch documentation to try to make the process of testing patches easier and faster for users.

— *Jaikumar Vijayan*

Short Takes

Google Inc. has asked the European Union's Competition Commission to let it participate in the antitrust investigation of Microsoft Corp., joining Mozilla Corp. and Opera Software ASA. The EC has accused Microsoft of shielding Internet Explorer from competition by bundling it with Windows.

Microsoft has decided to let 25 recently laid-off workers keep severance overpayments that averaged between $4,000 and $5,000 per person. The vendor had previously asked the workers to return the money.

The U.S. Federal Communications Commission has proposed fining 600 telephone companies and VoIP providers $10,000 to $20,000 for failing to properly file annual reports proving that they protect customer data.

Nortel Networks Corp. announced that it plans to lay off 3,200 workers in addition to 1,800 job cuts it had announced as part of a restructuring after filing for Chapter 11 bankruptcy protection.

SECURITY

University Admits to Third Recent Breach

THE UNIVERSITY OF FLORIDA in Gainesville late last month disclosed that a breach discovered in January exposed personal data on 97,200 students, faculty and staffers who attended or worked at the school between 1996 and 2009.

The latest breach involved a 20-year-old server that hosted free e-mail services and online course offerings for faculty members, as well as Web sites for fraternities and sororities.

The intrusion was discovered during a routine systems review by the university's IT staff, said a spokeswoman. She said the hackers accessed names and Social Security numbers.

The school is notifying most of those affected by the breach, the spokeswoman said, adding that it does not have contact information for about 5,000 potential victims. It is also creating an IT task force charged with finding possible security issues "before they become problems," she said.

Meanwhile, the school said in November that the names, birth dates, Social Security numbers and addresses of more than 330,000 current and former College of Dentistry patients had been exposed in a computer intrusion discovered on Oct. 3.

And an undated statement now on its Web site says a configuration error in the school's LDAP directory server opened a path for hackers to access the personal data of about 100 people.

– JAIKUMAR VIJAYAN

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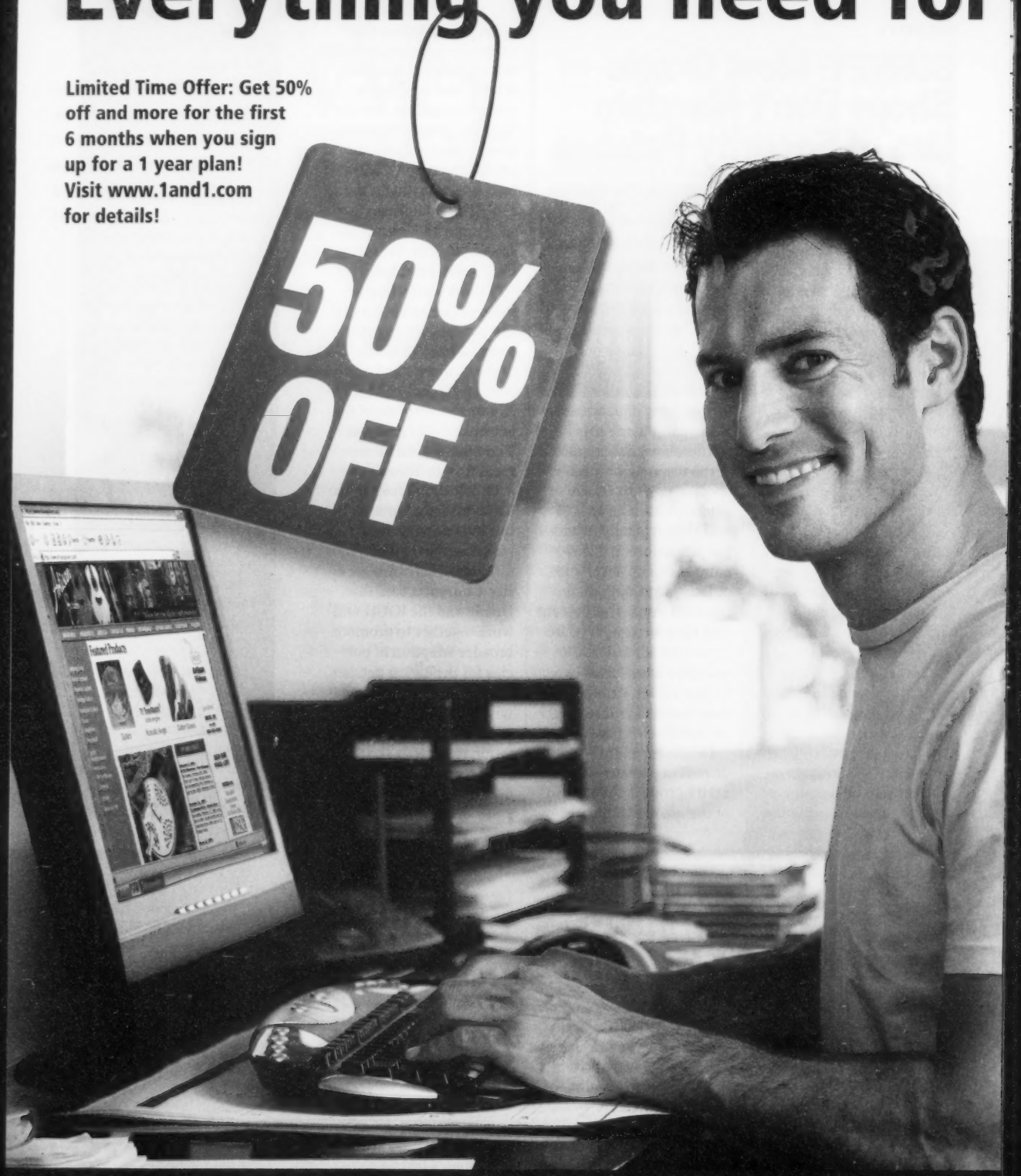

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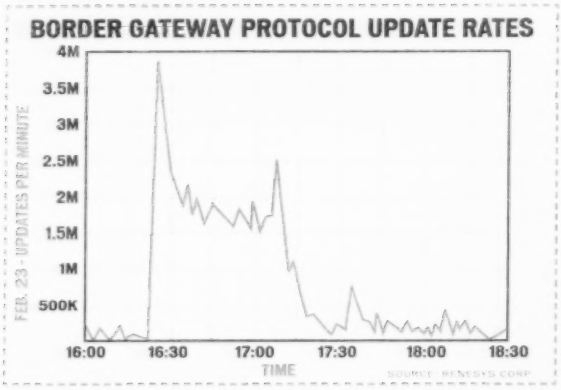
NETWORKING

Czech Firm, Cisco Bug Slow Global Internet



A HIGHLY UNUSUAL network-configuration update by an inexperienced administrator at a small DSL provider in the Czech Republic last Monday choked Cisco Systems Inc. routers around the globe, slowing worldwide Internet performance for about an hour.

According to officials at Renesys Corp., an Internet monitoring company, a network administrator at Supro-Net Spol. SRO in the Czech town of Uherský Brod triggered the problem when lengthening the so-called autonomous system (AS) path that users follow to the firm's Web site. The AS path was several orders of magnitude greater than necessary, noted Earl Zmijewski, vice president and general manager at Renesys.

Zmijewski said a bug in Cisco's Internetworking Operating System makes its routers susceptible to very long AS paths.

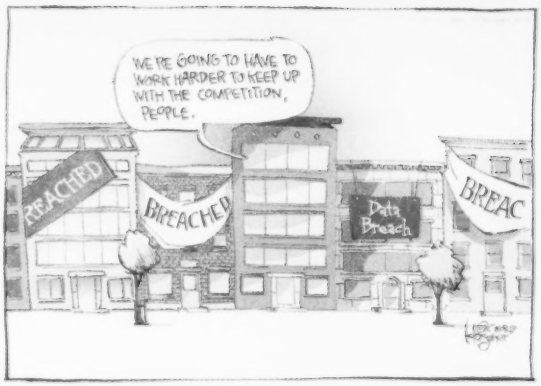
"What we think happened next is the Internet equivalent of a massive buffer overflow," he added.

The overflow "triggered a great deal of widespread routing system instability and underlying connectivity issues," wrote Danny McPherson, chief security officer at Arbor Networks Inc., in a blog post.

Cisco did not respond to a request for comment.

— Jaikumar Vijayan

BETWEEN THE LINES *By John Klossner*



BENCHMARKS LAST WEEK

Hewlett-Packard Co. said that it plans to distribute and support server rival Sun Microsystems Inc.'s Solaris 10 operating system on its ProLiant hardware line.

Market research firm IDC reported that worldwide server revenue fell 14% year over year in the fourth quarter of 2008, the biggest quarterly decline since the days of the dot-com bust.

NINE YEARS AGO: A U.S. Senate committee said the estimated $100 billion spent by IT departments on year 2000 fixes was worthwhile because most of the reported Y2k problems were minor.

Global Dispatches

Struggling Satyam Gains New Business

HYDERABAD, India – Satyam Computer Services Ltd. has signed new contracts worth $250 million (U.S.) since Jan. 7, when the company plunged into a financial crisis after officials disclosed that it had overstated profits.

The company announced the new business after Satyam's board met on Feb. 21 to finalize the process for selling off a controlling stake in the company to a strategic investor.

Two days earlier, the Indian government's Company Law Board had approved the outsourcer's proposal to sell a stake in the company. The board requires that the investor be chosen through an open bidding process and acquire at least a 26% stake in Satyam.

The board also said that it had accepted the resignation of the company's auditor, PricewaterhouseCoopers International Ltd.

John Ribeiro, IDG News Service

Tata Adds Third U.K. Data center

MUMBAI, India – Tata Communications Ltd. last week said it plans to open a new data center outside London as part of an effort to further expand operations beyond its Indian base.

The new 21,400-square-foot facility is slated to open during the second quarter. The company did not disclose the cost of building the facility, which will be Tata's third data center in the U.K.

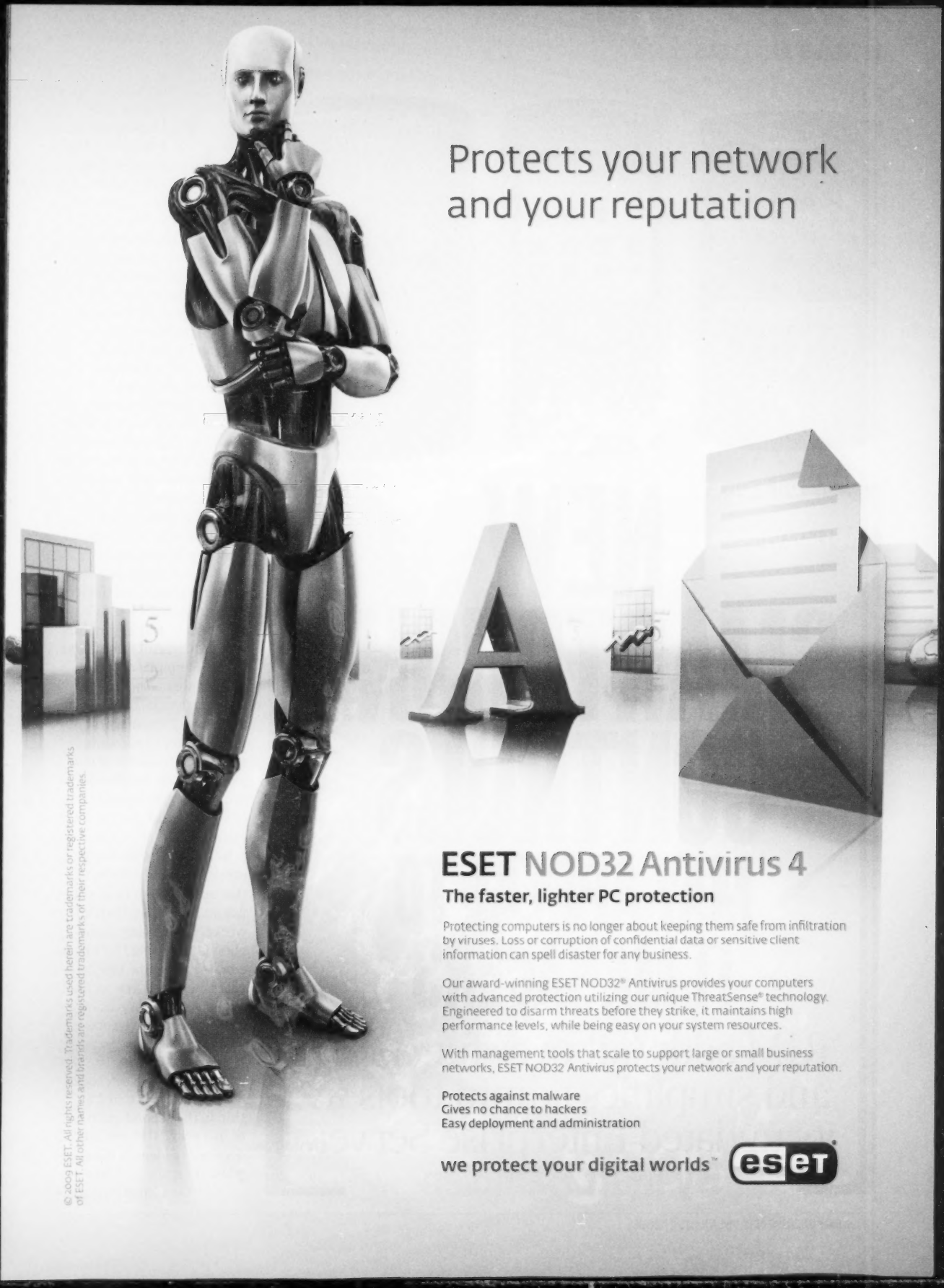
Tata officials have said that the company plans to invest some $2 billion on new facilities to expand its worldwide outsourcing operations.

John Ribeiro, IDG News Service

BRIEFLY NOTED

Lenovo Group Ltd. last week said it plans to cut 450 jobs at its Chinese operations, as the Morrisville, N.C.-based PC maker continues to reduce costs. The latest cuts follow the layoff of 2,500 Lenovo employees last month.

Sumner Lemon, IDG News Service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NEW SMARTPHONE CONTROLS MAY APPEAL TO IT MANAGERS

RIM adds fail-over functions and simplifies admin tools in its updated Enterprise Server.

By Matt Hamblen

RESEARCH IN Motion Ltd. is hoping that the latest version of its BlackBerry Enterprise Server will help convince skeptical IT managers that smartphone technologies can meet rigid corporate standards for management and security.

Analysts and users said that if new fail-over functions and simplified administration tools in the upcoming Version 5.0 of the BlackBerry management software work as RIM promises, thousands more workers outside of executive suites could safely use the mobile devices.

Analysts have said in recent months that improvements in technology — more powerful processors, faster networks, and devices that can support multiple networks — and lower costs are gradually increasing the spread of mobile devices into corporate settings.

Nevertheless, they noted that many IT managers remain wary of allowing significant numbers of employees to use handhelds because of a perceived lack of security and management capabilities.

Ken Dulaney, an analyst at Gartner Inc., estimated that up to 80% of large companies have more than 100 workers now using smartphones sanctioned by IT operations. Over the past two years, he added, the technology has started spreading from the executive suite to the corporate masses.

The new BlackBerry management tool set, codenamed Argon, is slated to ship in the second quarter of this year. RIM officials declined to identify the companies that are now beta-

Continued on page 14

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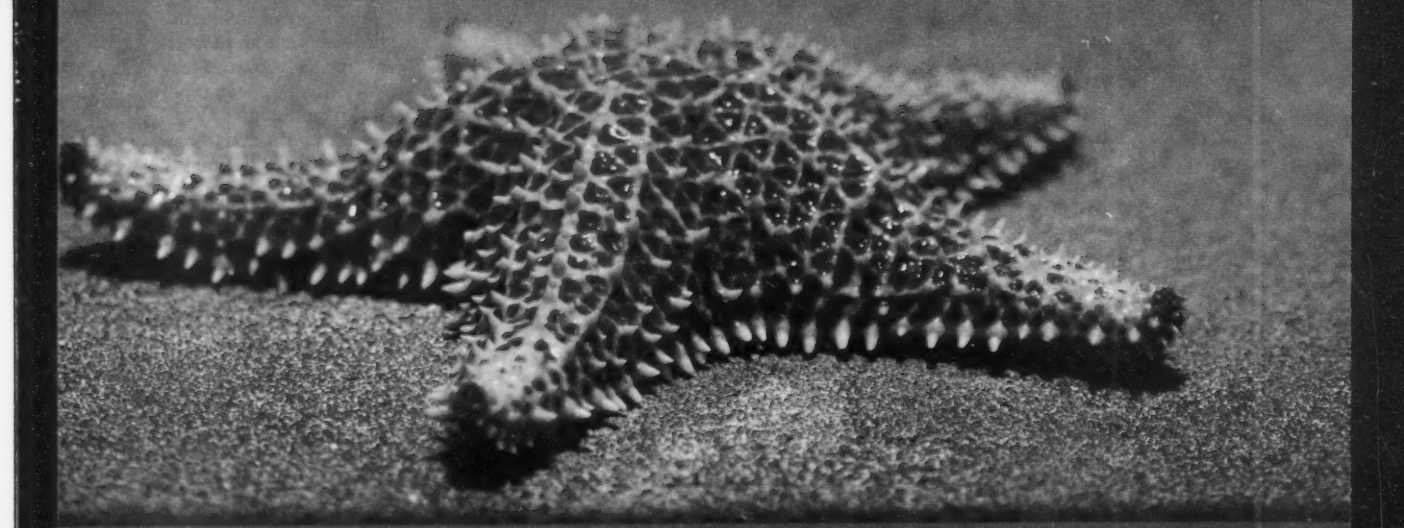

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THE POWER TO KNOW.

Continued from page 12

testing the software and can best explain its new features.

Peter Walker, senior director of software product management at RIM, said that the built-in fail-over capability in Version 5.0 will allow IT administrators to connect multiple servers with one system that is kept ready in "live, warm" high-availability mode for activation in case the primary systems start running below predetermined performance levels.

Dulaney noted that current versions of BlackBerry Enterprise Server require that IT developers build custom add-ins to accomplish fail-over from one server to another.

Implementing the fail-over capability will require some users to install additional hardware to run the backup tool, Walker said. However, he also noted that the multiple computer systems could share a single database that would not need to be replicated.

John D. Halamka, CIO at Boston-based CareGroup Inc. and a *Computerworld* columnist, said he expects that the new RIM server fail-over capabilities will be "very helpful to my disaster recovery planning efforts."

CareGroup, which oversees several health care operations, including Beth Israel Deaconess Medical Center and Harvard Medical School, supports more than 600 BlackBerry users, he said.

"BlackBerry is obviously a critical component to our overall communications infrastructure," added Tony Disalvatore, director of CareGroup's messaging server team. "Any outage would affect over 600 users."

Walker noted that Argon's new Web-based console allows IT executives to limit the administrative functions any single IT employee can control. For example, managers can whitelist or blacklist a single user for certain applications with the click of a mouse, he said.

Natan Glaich, IT director at Jam Industries Ltd. in Baie D'Urfé, Quebec, said he hopes that the new administrative console will significantly ease the job of managing the BlackBerry devices used at his firm.

The promised Web-based console would eliminate the need for a fat client to run a console, as was required in Version 4.16, which Jam is now using, Glaich noted.

More than 50 employees of Jam, a distributor of musical instruments and equipment, travel worldwide and often use BlackBerries to communicate, he said.

COMPETING OPTIONS

Dulaney believes that the promised upgrades in the RIM management tool set should keep it ahead of competing offerings. However, he pointed out that Microsoft Corp.'s bundle of mobile device management tools, System Center Mobile Device Manager, is closing the gap.

> **"BlackBerry is obviously a critical component to our overall communications infrastructure. Any outage would affect over 600 users.**
>
> TONY DISALVATORE, MESSAGING SERVER TEAM DIRECTOR, CAREGROUP INC.

BLACKBERRY ENTERPRISE SERVER 5.0

- Features new fail-over capabilities.
- Includes Web-based portal and other features designed to ease administration.
- Offers new end-user capabilities, including the ability to flag e-mails for future reference.
- Will ship in Q2.

In fact, Microsoft's offering could soon become a viable alternative to even the upgraded RIM tool set, said Stephen Drake, an analyst at market research firm IDC.

Drake noted that the upgraded RIM offering still lacks strong enterprise asset management tools, which would provide IT managers with data on how many versions and models of BlackBerry devices are used in a large deployment. Users must still rely on third-party vendors for those capabilities, he added.

IDC estimates that 175,000 BlackBerry Enterprise Servers are installed worldwide.

Most of the other options for managing smartphone devices include stand-alone, single-function tools from vendors such as Sybase, Zenprise and Mformation Technologies, as well as more broad systems-management products like Hewlett-Packard's OpenView, CA's Unicenter and IBM's Tivoli, analysts said.

Several of the stand-alone products offer impressive features, but RIM has gained an advantage by bundling its various management tools into a single offering, ensuring easier upgrade, patching and security processes, they added.

Dulaney suggested that RIM continues to benefit from the management software's closed technology — it only manages BlackBerry devices. However, Microsoft's more open technology is starting to catch on with corporate users, he said.

Jack Gold, an analyst at J.Gold Associates LLC in Northboro, Mass., said that in some companies, BlackBerry Enterprise Servers are managing tens of thousands of mobile devices. The updated version should help boost the number of such sites, he added.

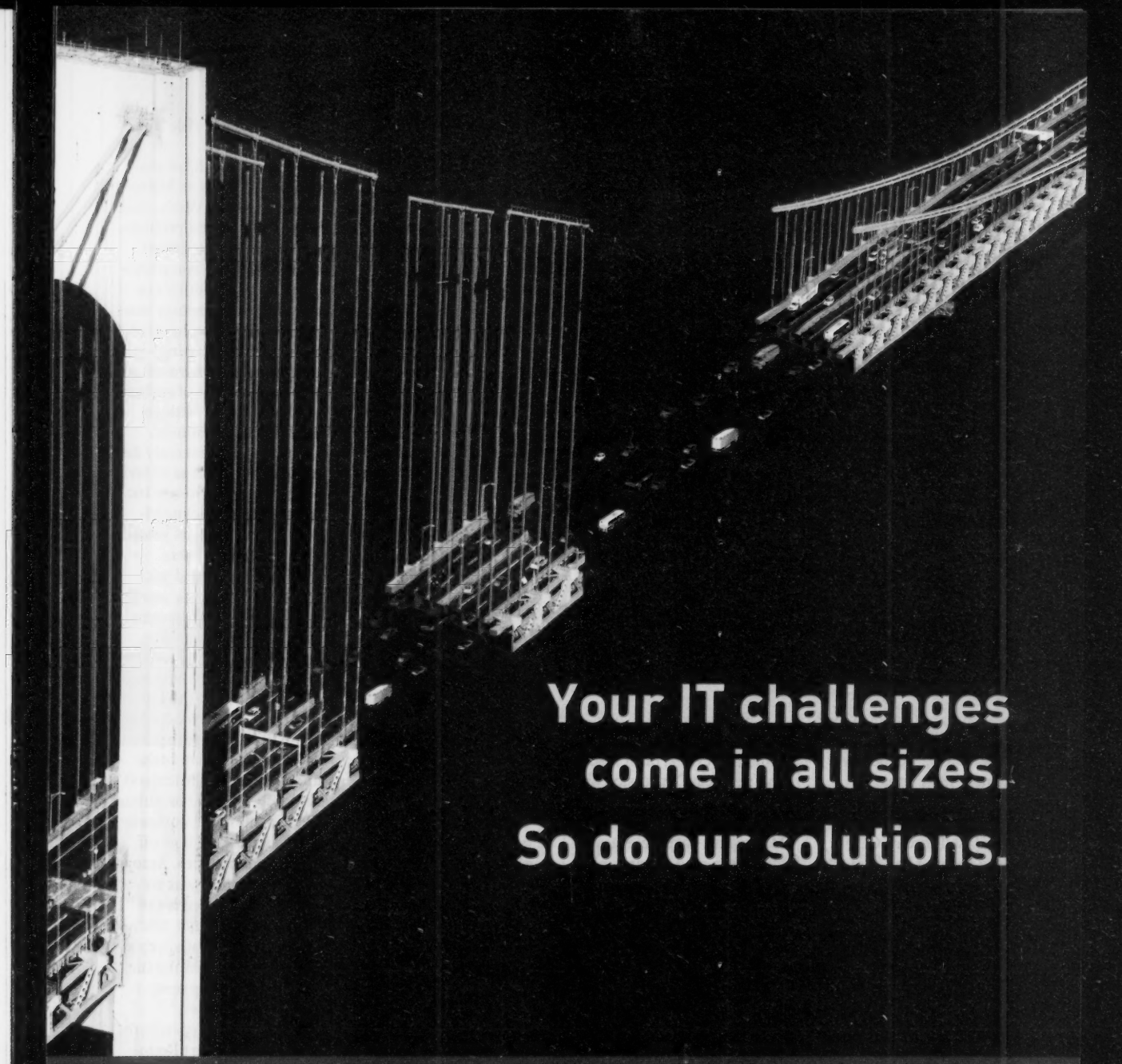
"RIM has the high ground on wireless management," Gold said. "No one else comes close."

Some analysts noted that IT managers also like the software's ability to freeze or wipe data from a BlackBerry that has been reported lost or stolen.

Waterloo, Ontario-based RIM recently claimed that about 20 million consumers and business customers use its handheld devices. Its customer list includes several companies managing close to 100,000 BlackBerry users each.

RIM noted that the updated software also adds new capabilities for end users, such as the ability to access, save, view, edit and e-mail documents from shared Windows files.

The company also announced plans to create an application storefront, similar to Apple Inc.'s App Store, where corporate and consumer users can buy RIM or third-party applications for their BlackBerry devices. ■



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Ballmer Still Plans to Throw Money Around

Microsoft's CEO says he hopes to gain market share during the recession — and he's willing to spend money to do so. By Elizabeth Montalbano

WHEN MICROSOFT Corp. reported an 11% year-to-year drop in its second-quarter profits on Jan. 22, it also announced a series of cost-cutting moves that included a plan to eliminate up to 5,000 jobs over the next 18 months.

And at a meeting with financial analysts in New York last Tuesday, CEO Steve Ballmer had some downbeat words about the economy and the software vendor's business outlook.

Ballmer said he expects Microsoft's revenue growth to be lower than usual in the second half of its fiscal year and possibly beyond. He added that he thinks economic conditions will be "relatively weak for a relatively long period of time."

But in spite of all that, Ballmer also said that Microsoft plans to continue investing money in an effort to increase its market share in key parts of the technology market, such as browsers, enterprise software, and online search and advertising.

"We're going to compete for share," he said. "That's economy-independent, and the theme I'm sending to all of our people is 'Share, share, share, share, share.'"

Ballmer noted that he's taking cues from how companies handled previous economic crises, most notably the Great Depression of the late 1920s and '30s. He even had members of Microsoft's corporate strategy group read the annual reports of various companies from that era to see how they coped with the economic hard times.

As a result of the history lesson, Microsoft is following the example of one company in particular: RCA, which kept investing in research and development and then dominated the TV industry after the Depression, according to Ballmer.

By year's end, Ballmer said, Microsoft plans to release its Windows Azure cloud computing platform to compete with services such as Amazon.com Inc.'s Elastic Compute Cloud.

Internet Explorer 8 and Windows 7 are also on the way, and Office 14 is expected next year. Moreover, Microsoft announced Windows Mobile 6.5 two weeks ago, and it hopes that the upgrade will put phones based on that operating system in the same class as the iPhone and BlackBerry Storm; Ballmer said Windows Mobile 7 will follow in 2010.

Forrester Research Inc. analyst Andrew Bartels said that even though Microsoft's revenue growth has slowed, the company has "lots and lots of money." Bartels added that he thinks the IT market is poised for a return to "strong growth" next year, with the recession currently masking demand for technologies such as cloud computing services, virtualization and unified communications. For Microsoft, he said, spending some of its cash hoard to better position itself for an economic rebound has low risk "and tons of upside."

But Matt Rosoff, an analyst at Directions on Microsoft in Kirkland, Wash., said Microsoft's biggest problem isn't an inability to invest money — it's the company's failure to successfully execute in new technology markets. In particular, he cited search and advertising — businesses that Microsoft has thrown hundreds of millions of dollars at with little to show for its investment.

Ballmer, who recently described Microsoft as a David compared with Google Inc.'s search Goliath, acknowledged the criticisms voiced by Rosoff and others.

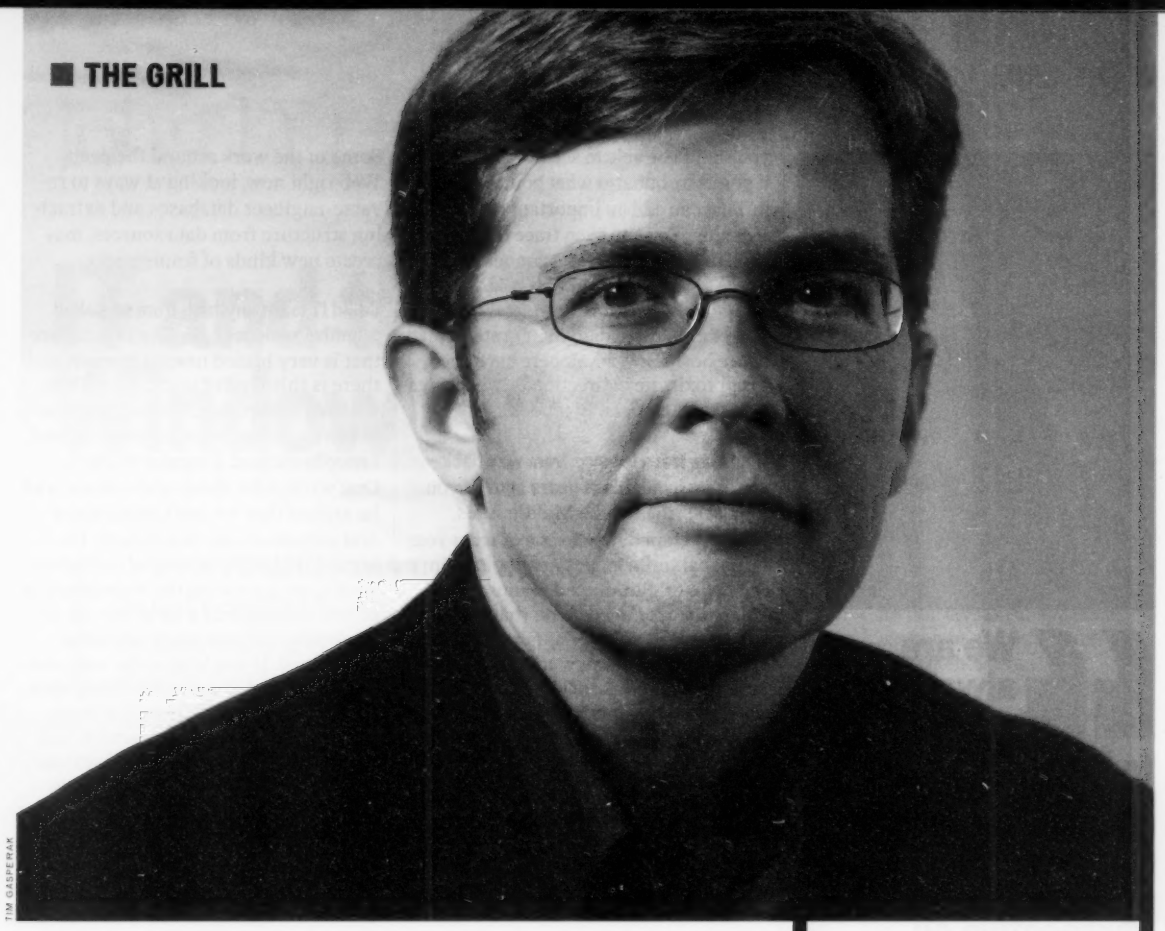
"Some of you will ask, 'Why do you stay in search and advertising?' " Ballmer said. But he reiterated Microsoft's stance that the search market is "extremely important competitively" for the software vendor, despite Google's dominance.

On the same day as the analyst meeting, Microsoft's research unit held its annual TechFest event at company headquarters to show off future technologies. Among those on display was an experimental search site called Viveri, which Microsoft expects to launch this summer to streamline the process of testing new search capabilities.

Viveri will be open to the public, and Robert Rounthwaite, a software architect at Microsoft, said the company hopes that technology enthusiasts will try out the functionality available there. That won't gain Microsoft much share by itself — but it might be a small step in the right direction. ■

Montalbano *writes for the IDG News Service. Nancy Gohring of the IDG News Service contributed to this story.*

ROBYN BECK/AFP/GETTY IMAGES



TIM GASPERAK

Alex Wright

The **information architect** talks about the **lessons of computing history,** the re-emergence of **oral culture** and all the data that **Google** doesn't index.

Alex Wright is a writer and information architect at The New York Times *and the author of* Glut: Mastering Information Through the Ages, *a reflection on the current state of IT and its roots in history.*

He has written for The New York Times, The Christian Science Monitor, Harvard Magazine *and other publications. He has led research and design projects for Harvard University, IBM, Microsoft, The Long Now Foundation, the Internet Archive and Yahoo.*

Do IT professionals pay too little attention to history? There is a tendency in computer science to ignore history. The German philosopher and programmer Werner Künzel said, "Computer theory is currently so successful that it has no use for its own history." There is this tendency to fixate on the future of IT, and the IT industry — so driven by new releases and product innovation — encourages that. We are always encouraged to look for-

Dossier

Name: Alex Wright

Title: Writer

Organization: *The New York Times*

Location: New York

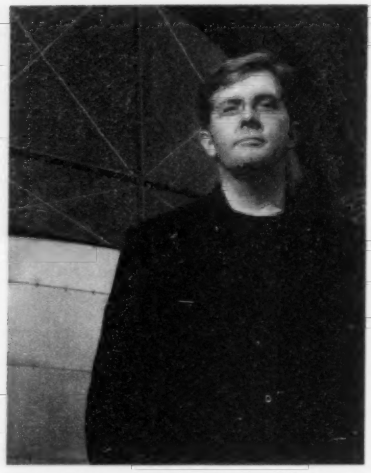
In high school, he was: "A long-haired nerd who spent lots of time in the computer lab but somehow never managed to get much past Basic."

Favorite nonwork pastime: Learning to play Scruggs-style three-finger banjo

Role model: Buddha

Recent good read: *Then We Came to the End,* by Joshua Ferris

Favorite movie: *Double Indemnity*



"We are always encouraged to look forward, sometimes at the expense of developing any sort of perspective on how we got here.

ward, sometimes at the expense of developing any sort of perspective on how we got here.

Can you give an example of the kind of thing we might learn from IT history? If you look at the history of hypertext that preceded the Web, there were some very promising ideas that were left by the wayside. If you look at the work of people like Ted Nelson or Doug Engelbart or Andries van Dam, you'll find some really interesting alternate ways of thinking about how networked information systems could work. Especially Ted Nelson. He laid out an incredibly thoughtful vision of how hypertext would work. His great project, Xanadu, has some important ideas in there. One was the idea that all hyperlinks should be bidirectional. When you get to a document, you should be able to see not only what it points to, but also what points into it. That can add an important layer of meaning. You can even trace that idea back to Vannevar Bush's famous essay "As We May Think," in 1945. [Unidirectionality] is a fundamental limitation of the Web today, but it's interesting to see how some developers have tried to approximate bidirectionality in things like TrackBack and Facebook.

Could we learn lessons from way back – say, from hundreds of years ago? If you look at scribes in the Middle Ages, they developed new forms of what you might call information technology in the form of illuminated manuscripts. There's a case to be made that they were an early form of hypertext. The scribes developed new tools for managing information inside books, things like tables of content and indexes. Eventually they came up with canon tables, which were basically visual indexes to the Bible. They'd take stories from each of the Gospels and cross-reference them in a visual index — a kind of illuminated hypertext — that gave you a way to scan the contents and move between related sections.

Is there a software interface idea floating around in there somewhere? Maybe. It's interesting to fish a little and look at these early ideas to see if they spark any ideas for today.

Your book describes efforts over many centuries to categorize knowledge via taxonomies and ontologies. Are we finished with that now? People say the Web has ushered in a new era, where the old ways of categorizing information are anachronistic. They say the Web is much more bottom-up and self-organizing, so that those top-down systems of control, like library catalogs or indexes, are no longer viable in a world of billions of documents. Nobody is going to be able to catalog all that stuff. That argument is held out against the Semantic Web crowd, suggesting they are trying to achieve the impossible, making ontologies that will make sense of the world.

I think there is a role for ontologies and taxonomies, but they will be machine-generated and will derive meaning out of large bodies of information. Some of the work around the deep Web right now, looking at ways to reverse-engineer databases and extracting structure from data sources, may create new kinds of frameworks.

Could IT learn anything from so-called primitive societies? We live in a culture that is very biased toward literacy, and there is this kind of unexamined bias we have toward nonliterate people, a tendency to see them as primitive and unsophisticated. Linguist Walter J. Ong wrote a lot about oral culture, and he argued that we don't understand oral culture or take it seriously. He argued that with the rise of electronic media, we are seeing the re-emergence of oral culture, and a lot of the old assumptions about literacy are being challenged. If you look at the way people interact on social networking sites, blogs, e-mail, IM, Twitter and so on, they have more in common with oral communications than with traditional [written] communications. There is something emerging here that we don't completely understand.

Are we keeping up with the information glut? A lot of people don't realize how limited a view of the Web we get by using things like Google. They have tens of billions of Web pages indexed, but they know about more than a trillion Web pages, most of which they don't index for a variety of reasons. And even beyond that, there's a larger web of data out there — in scientific databases, discussion forums, Twitter feeds, online commerce catalogs and so on — not showing up in search engines. There's some interesting work going on in deep Web research trying to figure out how to tame this even vaster array of information.

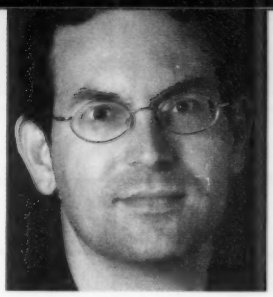
Are we nearing the end of print journalism? A lot of these end-of-print predictions are a little overblown. People are still buying newspapers. We will be in a multichannel world, with people consuming news from a variety of platforms, including print, the Web and mobile devices. And it will include a wave of new, special-purpose reading devices, like the Kindle, Amazon.com's new wireless "electronic paper" display.

— *Interview by* **Gary Anthes**

■ OPINION

John D. Halamka

IT and the Broken Window Effect



I'VE RETURNED to various childhood homes and found neighborhoods once characterized by white picket fences, station wagons and small shops transformed into rough, rundown and unsafe areas. These transformations did not happen overnight. They were very gradual, involving a process that law enforcement has dubbed the "broken window effect." The same thing can happen in a business or your personal life.

Imagine a perfect Lake Wobegon neighborhood, where everything is above average. One day, a baseball goes through a window, and the owner decides not to reglaze right away. Then, because that house looks a bit shabby, a neighbor leaves a junked car on the street. Then a bit of graffiti isn't cleaned up. Folks let garbage pile up in yards. The disorder gives rise to discourtesy and, eventually, crime.

For IT organizations, the broken window effect can take root when management begins to tolerate downtime, constant work-arounds and broken processes. The more management turns a blind eye to problems, the more problems crop up.

During the Giuliani administration, New York City set out to counter the broken window effect. Some of its initiatives, like banning squeegee-wielding windshield washers from busy intersections, were controversial. But a zero-tolerance attitude started to take hold, and the crime rate declined remarkably.

I'm promoting the same attitude in my IT organization. All downtime is investigated within hours, and a full report is issued at our weekly change-control board meeting. The meeting is not punitive; it is a learning environment for all of my technical managers. We try to find out whether the failure was in a process, training, policy, planning or life-cycle maintenance.

By examining every incident when it occurs and building a culture that encourages constant improvement based on the sharing of experiences, we ensure that broken windows are fixed and that recurrences are rare.

■ The change-control board is so rigorous that even I can get into trouble.

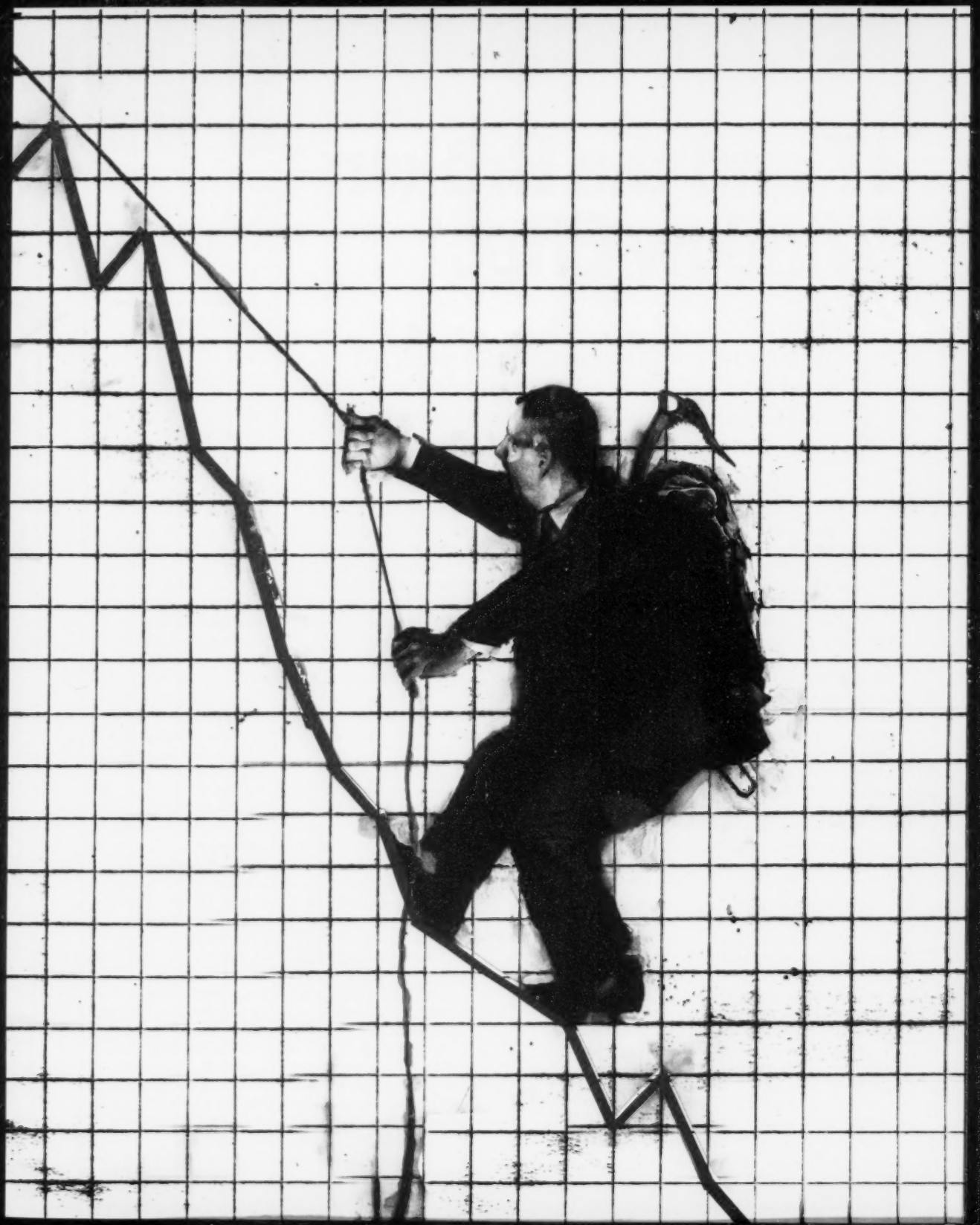
The change-control board was created after a catastrophic network collapse in 2002. At that time, we identified several aspects of the organization that needed improvement. For example, downtime details weren't shared among all groups; we had silos of technical knowledge; we tended to work around and patch rather than identify and correct root causes of problems; and we weren't planning projects as a coordinated whole, with all services — applications, networks, servers, storage, desktops — considered components of a single, comprehensive implementation.

The change-control board is so rigorous that even I can get into trouble. I recently implemented an update to a health information exchange application and did not discuss it with the board. I assumed there were no infrastructure implications — even though the application exchanges data outside our firewall and involves databases, integration engines and application teams. My next leadership meeting included an overview of all our health information exchange projects for all IT stakeholders.

I also try to address the broken window effect on an individual level. I erase all e-mails older than 90 days and all files older than one year. (It's rare that an issue has not been resolved after 90 days or someone requests a file older than a year.) I replace my laptop and BlackBerry every two years. I keep no paper of any kind in my office and very little in my home. (All my reading materials are digital.)

Whether it's your home, neighborhood or office, stay vigilant for the broken window effect, and you'll keep everyone engaged in renewal. ■

John D. Halamka *is CIO at CareGroup Healthcare System, CIO and associate dean for educational technology at Harvard Medical School, chairman of the New England Health Electronic Data Interchange Network, chairman of the national Healthcare Information Technology Standards Panel and a practicing emergency physician. You can contact him at jhalamka@caregroup.harvard.edu.*



5 RECESSION SURVIVAL Skills

BY MARY K. PRATT

Money issues now require much more of CIO Diana Melick's attention than they did in the past.

The faltering economy has her forecasting costs and slashing budgets just like her peers, but Melick went a step further. She had her staff scrutinize infrastructure costs, the largest area of IT spending.

"In good times, no one looks at their phone bills," she says, but when things get tough, "it's time to start looking at the details.

"And once you see those costs, you can ask whether there is a better way to manage them," she adds. That includes confronting vendors and asking for their own ideas on reducing costs.

Melick did all of the above, and as a result, the vice president and CIO at Alpharetta, Ga.-based Siemens Energy and Automation, a division of Siemens AG, cut some costs by 15% to 20%.

Melick identifies such fiscal finesse as one of the top skills needed to run IT today. In fact, the economy is shaking up CIOs' skill sets and lowering the premium on some traditionally valued traits while putting others in the spotlight. Here's a look at five skills that are vital to those leading IT right now.

DAVID HOLLENBACH

How to SHINE In Hard Times

Senior IT people aren't the only ones who need to tweak the skills they bring to the table in hard times. Junior staffers do, too. That's a tall order, especially for those who haven't gone through a recession before. If you're a junior staffer, here's what you should do to shine in this economy:

SHOW MORE THAN TECH TALENT. "It's not enough to be specialized; you have to be broader," says Preeta M. Banerjee, an assistant professor of strategy at Brandeis International Business School. She suggests pairing your IT skills with expertise in, for example, green issues or a specific business area.

UNDERSTAND HOW THE ECONOMY AFFECTS YOUR COMPANY. You should already have some business skills, but now you need to understand how economic cycles affect your business colleagues, the company as a whole and the industry in which it operates.

UNDERSTAND HOW THE ECONOMY AFFECTS YOUR JOB. Big projects and challenging initiatives are going to be put on hold, and you might find yourself working on less-than-exciting tasks. "You don't want to become a high-maintenance employee. You want to be the employee who goes in to the boss and says, 'What can I do?' " suggests Diana Melick, vice president and CIO at Siemens Energy and Automation.

MAKE OPPORTUNITIES. "It's very easy for people these days to keep their heads down and hope not to be noticed, but that's often exactly the wrong thing to do," says Peter Whatnell, Sunoco's CIO. Remember, he says, more people get medals and promotions in times of war "because situations are such that you have the opportunity to demonstrate what you're capable of."

KEEP CURRENT. "Be aware of the latest technologies and open-source packages that offer new ways to lower development/deployment costs," says Raji Arasu, vice president of product development at eBay.

GET FEEDBACK. Companies often shed poor performers during times like these, so it's important to stay at the top of your game. Arasu suggests soliciting feedback as part of a focus on continual self-improvement.

– MARY K. PRATT

1 PENNY-PINCHING

Like Melick, Guy J. Russo, the CIO at CommunityAmerica Credit Union in Lenexa, Kan., says he's focused on finding efficiencies anywhere he can.

"We're trying to make it fun to save costs, and we're trying to get people to think about it and demonstrate to the business how the IS organization gets it — that we know life is tough, and here's the plan for how we can save," he says.

He motivates workers by displaying their successes. A bulletin board at the door leading to the IT department holds a thermometer-style bar chart that tracks the savings realized through tech initiatives.

Russo is also setting new financial expectations. For example, he says his staffers know that coming in on budget isn't enough to earn kudos anymore; they have to come in under budget — but still deliver the expected high-quality services and products.

2 INSPIRING CALM

Workers can't influence the corporate decisions that could determine whether they'll keep their current schedules, pay grades or jobs, and as a result, they can feel powerless and panicked.

But while these times are tumultuous, your leadership shouldn't be, says Peter Whatnell, CIO at Sunoco Inc. and president of the Society for Information Management.

» Right now, your leadership counts more than it has for the past 10 years.
PETER WHATNELL, CIO, SUNOCO INC.

"Right now, your leadership counts more than it has for the past 10 years. And you have to be a leader for your staff and a leader for your company," he explains. "You have to let them know that you're going to keep them up to date. You have to maintain a positive but honest communication with your staff, deal with issues as they come up, and if you have to make cuts, make them humanely and decisively."

Even those who tend to get flustered under pressure can learn to have a calm demeanor, says Susan J. Bethanis, CEO of Mariposa Leadership Inc., a San Francisco-based leadership coaching service. "You have to be able to find what your hot buttons are and make sure that when you feel [panic] coming, you take a breath. And when you're assessing other people's fears and emotions, ask a lot of questions and give them opportunities to express their concerns," she says.

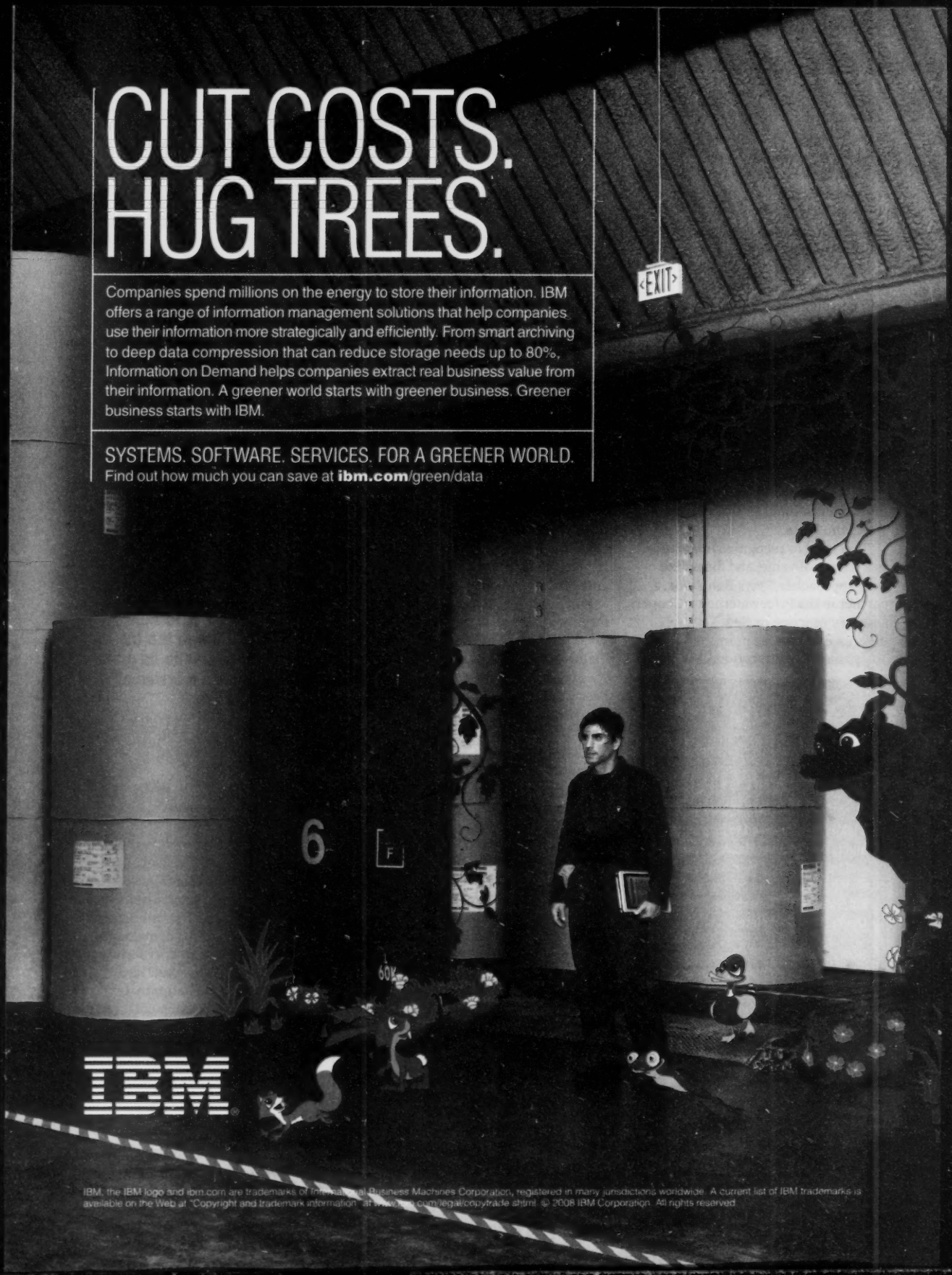
The key, says Bethanis, is to turn your own or others' concerns away from panic by developing action plans. "Go from a victim mentality to 'What's the goal? What should we do?' " she says. "It's not denial. It's being realistic, but it's also being positive. It's calming."

3 MOTIVATING WORKERS

"Even in this downturn, strong performers and good IT professionals are still very much in demand, so retention of top talent continues to be one of the main worries of an IT leader," says Raji Arasu, vice president of product development at eBay Inc. in San Jose. That means executives need to connect with junior-level workers now more than ever.

Unfortunately, most companies don't have the cash to put staffers into

· *Continued on page 24*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Continued from page 22

cutting-edge assignments that might motivate them, Bethanis says.

Given that, IT leaders need to create low-cost ways to keep their best employees engaged, she says. Give them new responsibilities and assign them to different types of projects. "You need to be talking to them on a regular basis, asking 'How is it going? What help do you need? How can I blaze a trail for you?' " she adds.

4 DRIVING INNOVATION

Many companies are so focused on survival right now that they're ignoring innovation, but, ironically, those that innovate will likely emerge the strongest, says Preeta M. Banerjee, an assistant professor of strategy at Brandeis University's International Business School in Waltham, Mass.

"You need to recognize innovation as a source of value, and formalize your approaches," says Bob Zukis, a partner in the PricewaterhouseCoopers advisory practice in New York.

As an example, he points out that the companies that are better at weathering today's economic storm are using cloud computing and social networking technologies to develop creative, cost-effective ways to deliver services.

You don't have to budget money for innovation to get results, Bethanis says. "You need to develop an innovation team. You be the sponsor, get them together and ask how they can brainstorm, collect and vet ideas better. And make some rules — like the ideas have to be revenue-enhancing," she says. "It doesn't cost much in time or money to do that."

Moreover, involving your best employees in this kind of initiative will not only enhance innovation but also motivate and engage your people.

5 MARKETING IT'S VALUE

CIOs have to demonstrate — even trumpet — the value they add, says Dan Roberts, president of Ouellette & Associates Consulting Inc. in Bedford, N.H., and a contributing author to *Leading IT Transformation: The Roadmap to Success* (Kendall Hunt Professional, 2008).

"Marketing is so critical today, and we need to understand that everyone from the CIO to our individual contributors is marketing the IT organization and creating perceptions of our value," he says.

Shouvik Dutta, CIO at Hart Schaffner Marx, a Chicago-based clothing manufacturer, says he believes his staffers and their successes have to be visible in order for IT to demonstrate its value. So he has his direct reports spend a half-day every two weeks working in the business units that they serve. This gives them insight into business needs while heightening IT's visibility, making others aware of its contributions. For example, his workers recently recognized through this practice that the sales group needed better insight into the manufacturing side to do better forecasting. So IT delivered new applications that allowed sales to pull up the productivity data it needed.

CIOs who can refocus their skills to fit the current challenges can survive today's difficult environment and come out stronger when it's over. ■

Pratt *is a* Computerworld *contributing writer in Waltham, Mass. Contact her at marykpratt@verizon.net.*

» Even in this downturn, strong performers and good IT professionals are still very much in demand, so retention of top talent continues to be one of the main worries of an IT leader.

RAJI ARASU, VICE PRESIDENT OF PRODUCT DEVELOPMENT, EBAY INC.

Now Here's What You SHOULDN'T Do

DON'T FREEZE. "Now more than ever, IT leaders need to be proactive and take initiative. Hesitate, and you end up reacting to your environment. Flinch, and you end up being roadkill," says Dan Roberts, president of Ouellette & Associates.

DON'T BE THE ONLY HERO. Rely on your team, and delegate. For example, if you can't calmly communicate the changes taking place, give that job to your best communicator.

DON'T LISTEN ONLY TO THE TOP TIER. Middle managers and lower-level employees often have more front-line experience than top execs do, and that can give them insight into how to improve services.

– MARY K. PRATT

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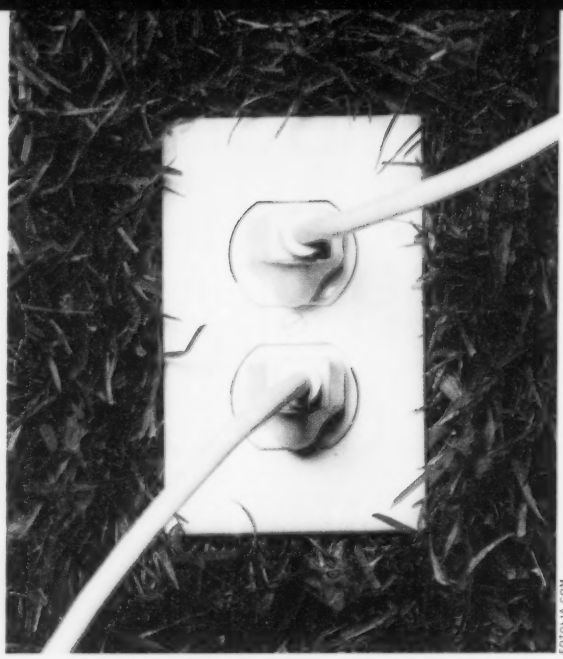
Power Struggle

What role should IT play in reining in energy costs?

BY TAM HARBERT



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THE IT department buys the technology; facilities buys the energy. That's the way it's always been in corporate America. But that may be changing.

As energy costs seesaw wildly and public concern over the environment grows, data centers are landing in the corporate cross hairs. And IT managers may find themselves on the hot seat, asked to account for the huge energy costs their systems incur. Some forward-thinking companies are even beginning to wonder if it isn't time for their IT and facilities departments to merge.

Should CIOs get ready to add "energy czar" to their lists of job roles?

Management think tank McKinsey & Co. seems to believe as much. In a study presented last year at the Uptime Institute's Green Enterprise Computing Symposium, McKinsey called on companies to move accountability for facilities operations to the CIO and to appoint an internal energy czar to better focus on the true cost of data center ownership, which includes both equipment and facilities expenses.

Jonathan Koomey, a data center energy efficiency expert at Lawrence Berkeley National Laboratory, agrees with the basic premise of the McKinsey study. But Koomey believes that energy costs should be managed at a level above both IT and facilities so that the person with that responsibility "is able to make a decision about total costs, rather than having his or her own budget in mind."

And energy-minded corporations themselves? *Computerworld*'s spot check found that rather than making one person accountable, most organizations are scattering responsibility for energy efficiency through several organizations — IT, facilities and even marketing.

THE ENERGY CZAR

Google Inc. is the only major U.S. corporation we found that currently employs someone called an "energy czar," although the czar is not directly responsible for data center costs. "My focus is on 'greening' Google's energy supply," explains Bill Weihl, Google's green energy czar for the past two and a half years.

Weihl's goal is to figure out how Google can use more sources of renewable energy and how to use that energy more efficiently. But when it comes to data centers, his role is advisory.

There is a single person at Google who is responsible for both equipment and operating infrastructure energy costs, says Weihl, and that's his boss, Urs Hölzle, who is senior vice president of operations and a Google fellow. Hölzle reports to a senior vice president of engineering, who in turn reports to the CEO.

But everyone at Google is "empowered to think about total cost of ownership," Weihl stresses. "That has led to a lot of innovation around energy efficiency," he says. "We've been ahead of the curve in making trade-offs between the equipment budget and the operations budget." For example, Google has been designing and building its own energy-efficient equipment for several years.

Yahoo Inc. doesn't have an energy czar, but it does have Christina Page, who has been director of climate and energy strategy since July 2007. Her job is to coordinate energy-efficiency efforts across the company, including its data centers.

Page reports to Meg Garlinghouse, a senior director and the head of a committee known as Yahoo for Good, which focuses on community relations, including efforts to promote green practices. Garlinghouse reports to the senior vice president of marketing.

That raises red flags among skeptics on the lookout for companies more interested in "greenwashing" than they are in real organizational change, but Page bristles at the suggestion.

"I have a budget and a mandate that reaches across organizational silos and comes with the blessing of

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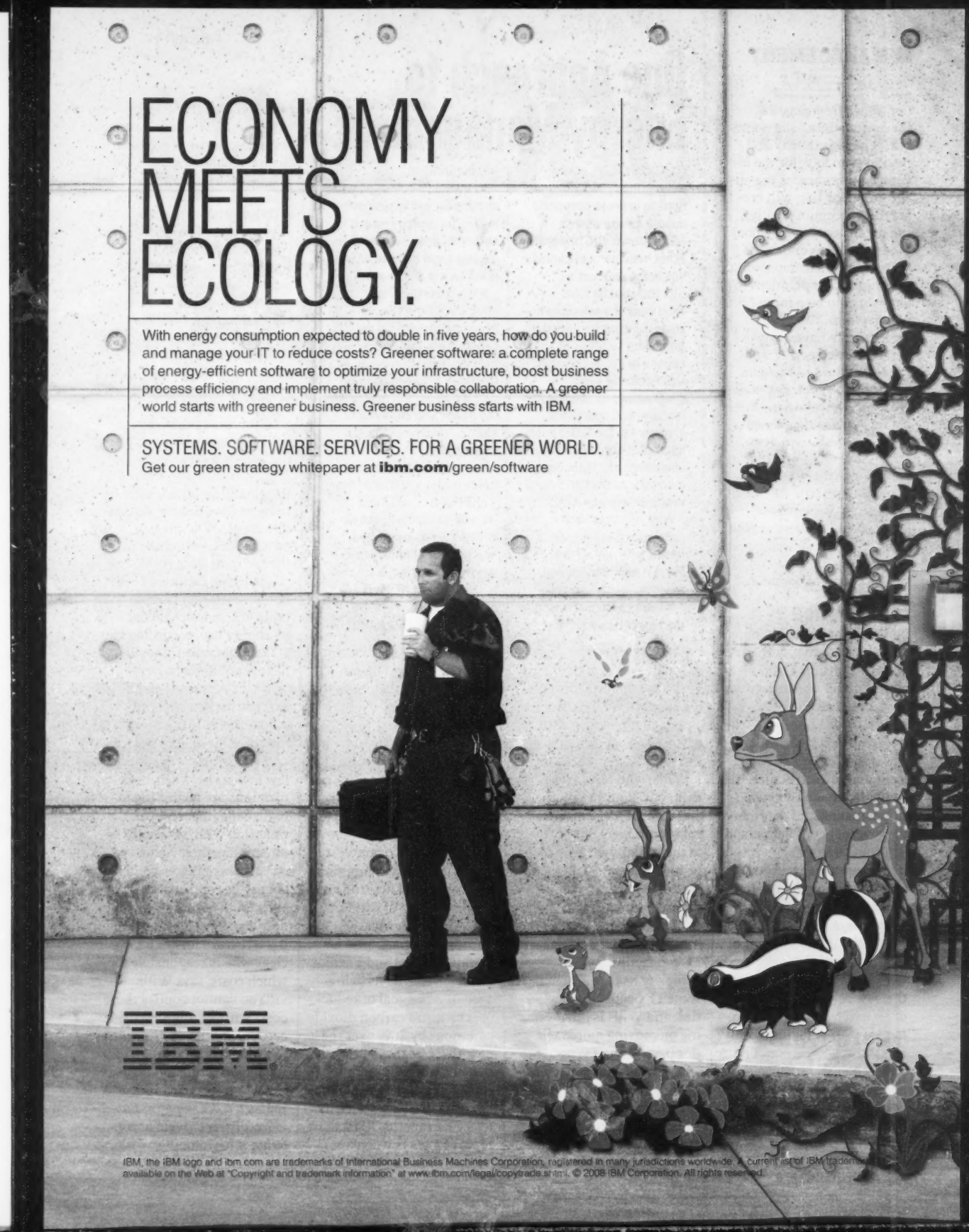
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Continued from page 26

the co-founders," she points out. "I have authority and flexibility to look for the leverage points across the entire company that will create the maximum positive impact in addressing global greenhouse gas emissions."

Page says that, day to day, she shares best practices and works to help forge partnerships. "It's really important to have a conversation between IT and the folks who run the data centers," she says. Page talks with engineers and facilities staffers on a tactical level and with executives at a strategic level — and that can involve making recommendations to the CEO and chief technology officer. Total cost of ownership, she says, "is top of mind for our folks here, all the way up to the CTO and co-founders."

CTO IN CHARGE

Bank of Montreal has come fairly close to the McKinsey ideal by putting IT and facilities under one executive — in this case, the CTO.

As part of a program launched two years ago to better manage its IT equipment and infrastructure, the company created a new position: manager of data center governance. That person is responsible for forecasting IT equipment needs and translating them into language that the facilities department can understand, says Mike Wills, director of facilities management.

Wills, who helped create the new role, has 30 years of experience in IT, having moved over to facilities only about three years ago. The data center governance manager, Rocco Alonzi, is Wills' counterpart in IT.

The two men work in partnership to manage Bank of Montreal's overall energy portfolio. Alonzi reports to the senior vice president for enterprise infrastructure, who reports to the company's CTO.

Wills, who forecasts utility needs, floor build-outs, and cooling and mechanical requirements, reports to the senior vice president of corporate real estate and strategic sourcing, who also reports to the CTO.

The structure encourages integration of the bank's IT and facilities staffs. The company has already moved some IT people into facilities, and Wills is now working on moving more facilities people into IT.

And Wills has started requiring his facilities quality-control managers to be certified in ITIL standards for managing IT infrastructure, development and operations. "So now they have the same language as the IT people," he says.

Some companies haven't embraced that type of energy-efficiency-driven reorganization but are starting to hold CIOs responsible for IT energy use.

Last year, for example, reducing power consumption became for the first time an important part of Atti Riazi's job at Ogilvy & Mather Worldwide. Riazi, who is worldwide CIO and a senior partner at the advertising agency, has a goal of reducing the firm's carbon dioxide emissions by 20% over the next three years. Toward that end, IT has begun measuring its power use and devising ways to reduce it. Every six months, Riazi must report IT energy consumption to the CEO and CFO.

Reducing IT energy use is also a priority at medical insurer Highmark Inc. Vice president of infrastructure management Mark O'Gara, who reports to the CIO, says one goal is to reduce power consumption within the data center by 10% this year. But IT consumes only 40% of the power used in the data center. Facilities and infrastructure consumes the rest, with facilities reporting to the vice president of human relations and administrative services, who reports to the CEO.

IT and facilities are working together on ways to reduce energy use, such as improving airflow, which reduces the need for air conditioning. Other measures have reduced expenses in the facilities budget.

That said, facilities does not have a target comparable to IT's for reducing its energy use, according to O'Gara. "Maybe that will be next year," he says.

While very few companies are tackling energy management in just the way McKinsey envisioned, and energy czars are still few and far between, organizations are beginning to realize the importance of tinkering with, or wholly reorganizing, their reporting structures to better control energy use and costs.

At Bank of Montreal, the new energy-centric reporting structure makes it very clear who is responsible for which costs, says Wills.

"You cannot control these costs without aligning these accountabilities up," he notes. "I think that's the tough part for a lot of large organizations — to get that clarity." ■

Harbert, *a Washington-based journalist, is a frequent contributor to* Computerworld.

One Approach to Energy Management

MCKINSEY & CO. offers three primary recommendations to improve corporate energy management:

1. Improve and integrate asset management capabilities in the data center.

2. Include the true total cost of ownership in business-case justifications for adding facilities or applications to the data center.

3. Formally move accountability for data center facilities and operations expenses to the CIO. Appoint internal energy czars with operations and technology mandates to double IT energy efficiency by 2012.

Why advocate such a radical shift in responsibilities? McKinsey analyst Will Forrest points to several reasons:

- **Data centers are usually the biggest users of energy in a corporation.**
- **IT would be charged with developing and implementing the technology – such as dashboards – required to measure and monitor energy efficiency in any event.**
- **It's important that companies hold someone accountable for total data center costs and energy efficiency. Even in companies that have a "green champion," if that person isn't given the power and authority to deliver results, results will be limited.**

Forrest thinks implementation is just a matter of time – and maybe semantics. "It may not come about exactly as we've suggested," he says, "but I think you'll see [restructuring] become a de facto part of the IT organization."

– TAM HARBERT

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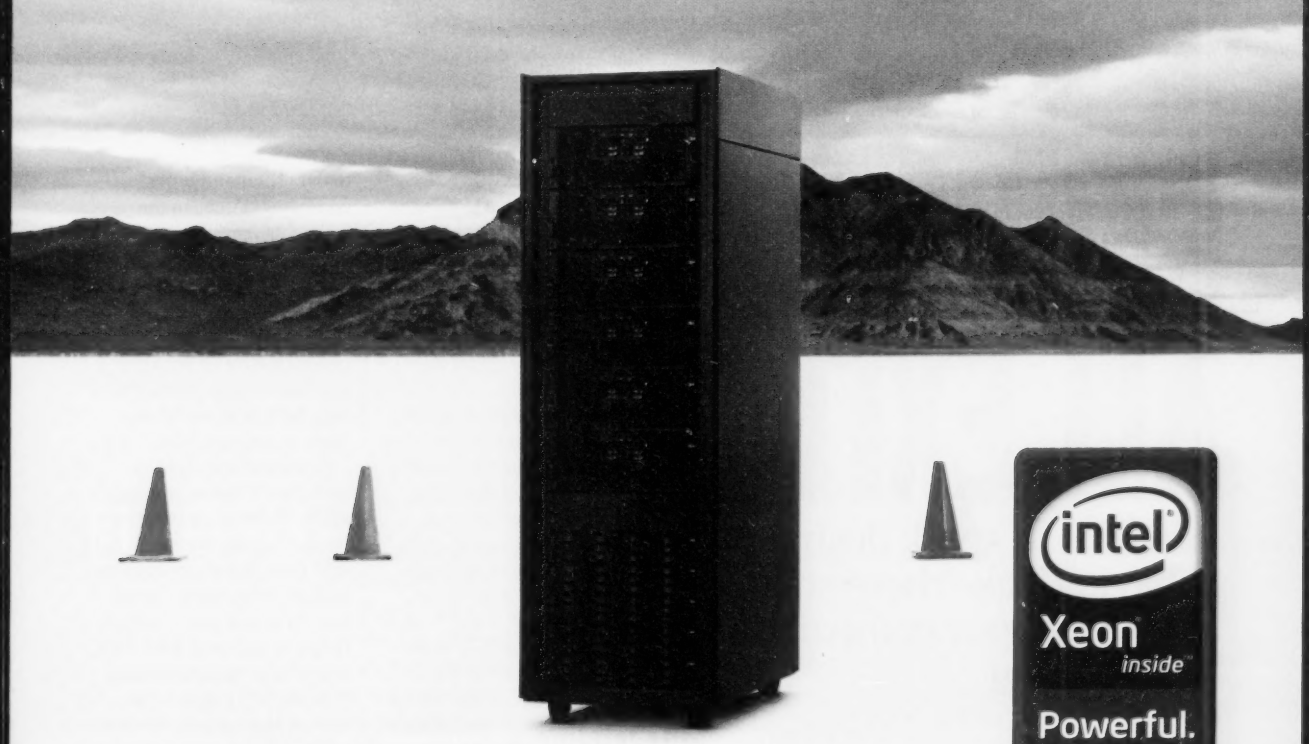

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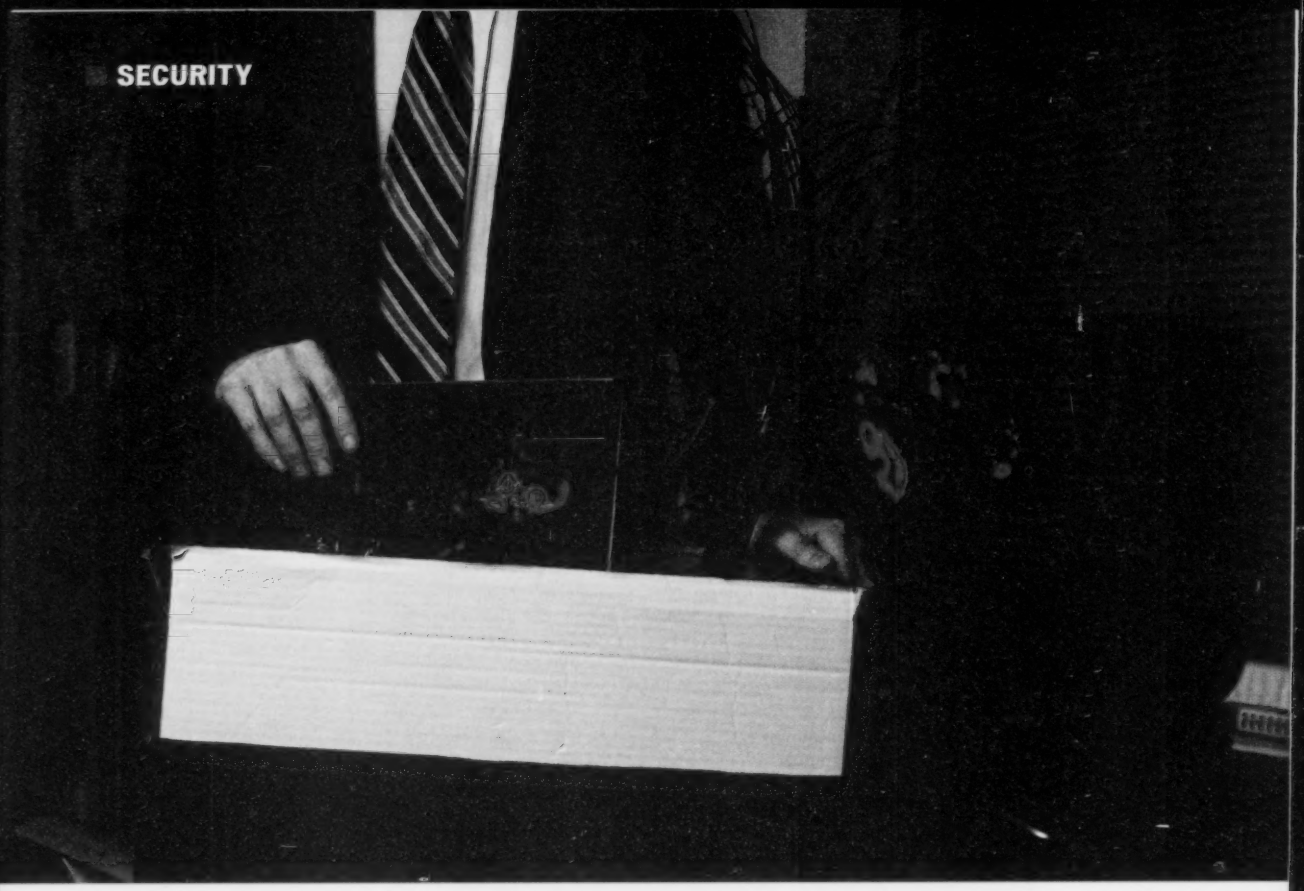

SECURING ALL EXITS

Layoffs can spark destructive behavior. Take these steps to protect your company.

By Julia King

A SENIOR CORPORATE executive leaves the company, taking with him his framed family photographs, his prized gold pen-and-pencil set — and the passwords of several hundred employees.

One of your firm's most experienced sales reps hears a rumor that she is sure to be laid off. And she is, but before she gets her pink slip at the beginning of the next quarter, she manages to download to her Gmail account a long list of A-plus customers and their ordering and payment histories.

If you're thinking "Never at my company" or "Not my employees," think again. Scenarios like those above are playing out every day, experts say, and even the most trusted and skilled professionals can be driven to data theft and other computer crimes in the face of crippling economic pressures and looming job layoffs.

Recent statistics bear this out. In a late 2008 survey conducted by IT security firm Cyber-Ark Software Inc., 56% of financial services workers in New York, London and Amsterdam admitted to being worried about layoffs. In preparing for the worst, more than half said they had already downloaded competitive corporate data that they planned to use to get their next jobs. In the U.S., the percentage was slightly higher, with 58% of Wall Street workers saying they had done so. And 71% of all workers said they would definitely take data with them if they were confronted with the pros-

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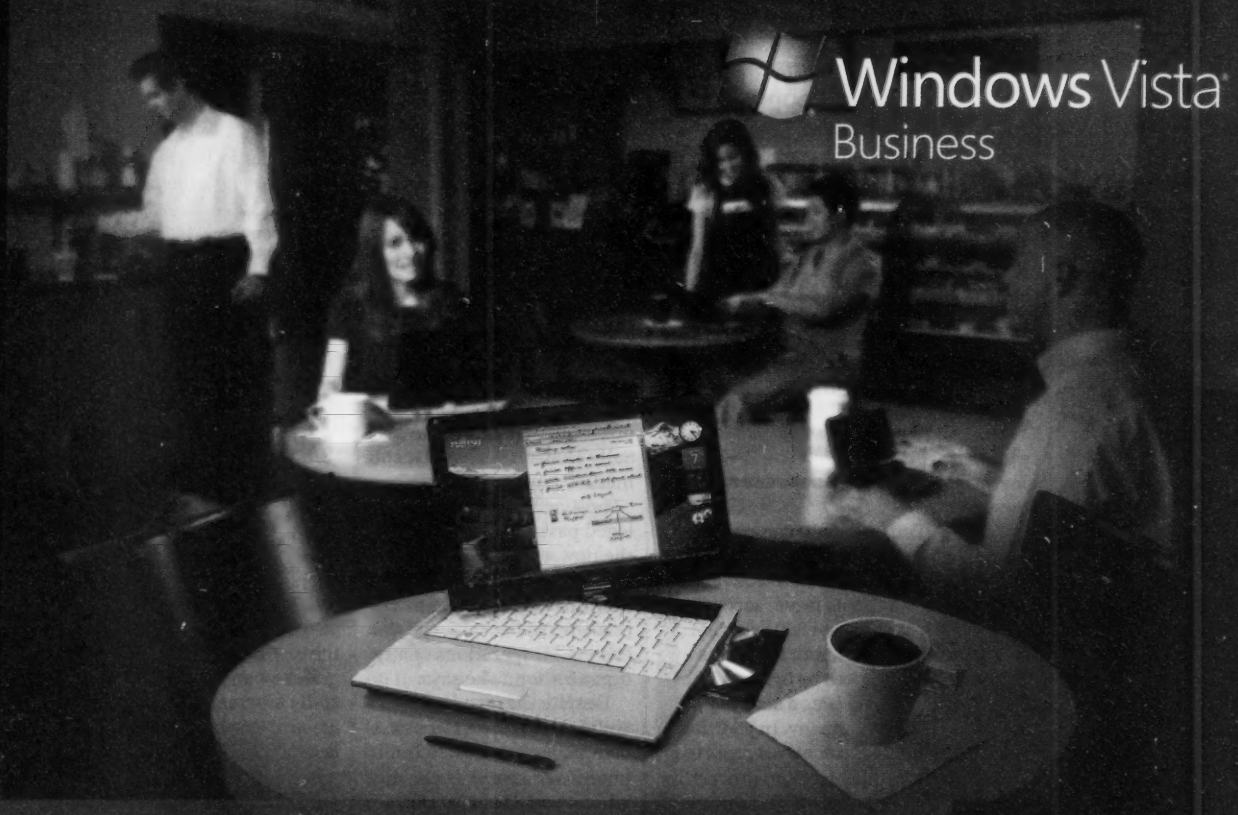

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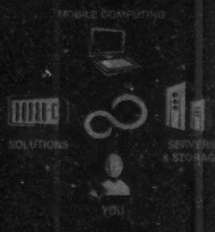

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Continued from page 30

pect of a layoff tomorrow.

"When people are desperate to pay for the roof over their head or put food on the table, they're capable of doing things they wouldn't normally do, which is why crime goes up when the economy suffers," says David Griffeth, vice president of business line integration and reporting at RBS Citizens Bank. "That doesn't go away because you have a bachelor's degree or a master's degree. It's a common fear based on need. You have a different level of comfort with the crime you commit."

SUPPLY AND DEMAND

"It makes sense that [data] theft is on the rise when demand is low and supply is high. Right now, there's a huge supply of employees, and if one person can make himself more attractive to a potential new employer, it would be a great temptation," says Keith Jones, a digital forensics investigator and partner at Jones Dykstra & Associates, a computer security consultancy in Columbia, Md.

Meanwhile, the legion of laid-off workers continues to grow. In the past few months, Citigroup, SAP, Sun Microsystems, IBM, Sprint and Microsoft have all announced layoffs, adding to the tens of thousands of already unemployed people, many of whom are technically savvy and have access to key computer systems, highly sensitive corporate data or both.

What's surprising — and potentially lethal to corporate security — is how many departed workers retain such access via so-called orphaned accounts long after they've been discharged.

> **"When people are desperate to pay for the roof over their head or put food on the table, they're capable of doing things they wouldn't normally do.**
>
> **DAVID GRIFFETH,** VICE PRESIDENT OF BUSINESS LINE INTEGRATION AND REPORTING, RBS CITIZENS BANK

Four out of 10 companies have no clue whether user accounts remain active after employees leave, according to a study of 850 security, IT and human resources executives by Symark International Inc., a security software company. In addition, 30% of executives reported that they have no process in place to locate and disable orphaned accounts. Another sorry statistic: 38% of them have no way of determining whether a current or former employee is using or has used an orphaned account to access information.

The most common threat is that an employee may take intellectual property, including strategic plans or customer data, before or soon after he is let go, says Jonathan Penn, an analyst at Forrester Research Inc.

And things can get even more dicey when IT staffers are laid off. Often, these are employees with "the keys to the kingdom," says Jones. He notes that Roger Duronio, a former IT worker at UBS Paine Webber who was convicted and sentenced to eight years in prison for planting a software logic bomb, was able to do such extensive damage to company data because "he had access everywhere." (A logic bomb is software code that triggers malicious functions under certain prescribed conditions; for example, one could be set to delete all customer accounts at a particular time on a specific date.)

Systems administrators and users with privileged account access — such as those who know root passwords — can definitely pose a greater threat, says Sally Hudson, an analyst at market research firm IDC. "Those with access to privileged passwords possess the power to change system data, user access and configuration. They also have the power to easily sabotage the critical IT operations of any organization," she says.

Despite these vulnerabilities, there are steps that companies can take to limit potential damage, especially when conducting layoffs.

Do your homework. Exit strategies and security measures should vary depending on the employee's role. Executives and managers who are charged with laying off personnel shouldn't assume that disabling computer access is simply a matter of pulling a plug. "Before you lay off, look closely at the classes of people," advises Jones. "If they're from sales, HR or finance or [are] senior employees, it may take longer to [disable their access] because they have greater access to systems" than other employees do.

> **"IT people need to understand how sensitive their roles are, and there has to be zero tolerance for spreading rumors.**
>
> **KEN VAN WYK,** INFORMATION SECURITY SPECIALIST AND CONSULTANT

Involve IT in layoff plans as early in the process as possible. "It's important for IT to be synchronized tightly with HR," says Ken van Wyk, an information security specialist and consultant in Alexandria, Va. "But IT people need to understand how sensitive their roles are, and there has to be zero tolerance for spreading rumors. If an IT person tells people that they're going to be laid off, that IT person also needs to be included in the exit roster."

Make sure the proper security programs and policies are in place well before the layoff, advises IDC's Hudson. Among other things, you should make sure you're using systems to secure content, prevent data loss and manage threats. Such systems include firewalls, content- and spam-filtering tools and antivirus software. You should also have a secure identity and access management infrastructure. Also known as an IAM, this type of setup "controls the who, what, where, when and why of user activities throughout the enterprise," Hudson explains. Having the ability to monitor and evaluate how access rights are being used is critical to meeting governmental mandates and identifying system misuse.

Compartmentalize system access according to employees' roles. This is a secure system design principle that companies should implement at the beginning of any

SECURITY TIPS FOR GOOD TIMES AND BAD

Regardless of the economic conditions, IDC recommends taking these steps to ensure that systems will be secure and data will be protected when employees exit:

- **Clearly and completely document each worker's access to the network, applications, servers and the physical building.**
- **Shut down remote connections, including pcAnywhere systems and VPNs.**
- **Invalidate usernames and passwords.**
- **If the employee worked in IT, change root access and network access.**
- **Shut down external access to the telephone system.**
- **Make sure handhelds, smartphones and cell phones are turned in along with PCs and laptops.**
- **Collect ID cards.**
- **Use monitoring software to keep an eye on network traffic.**

software-development effort. "Access control means tightening up a lot more on the business logic layer," explains van Wyk. But all too often, companies forgo this step "because it requires more time and thinking through of the design of software," he says. In the absence of an initial secure design, the next best measure is to implement software that records users' access to systems and the actions they take while using various business applications, van Wyk says.

"Almost all business applications have some level of user ID and password security, and then, once you're in, you're in," he says. But with a tracking system, when a user goes into a database, everything that he does there is recorded — and potentially reported to law enforcement, van Wyk explains.

Part on good terms, but plan for bad times. Jones recommends that even if a layoff goes smoothly with no apparent disgruntlement on the part of the employee, a company should still collect evidence of its own due diligence in case there's some sort of investigation in the future. That's because companies that experience any kind of security breach, including the theft of data by a laid-off employee, must be able to show that they took all possible precautions and measures to protect that data.

Specifically, Jones says companies should take forensic images of departing employees' laptops, so they're available if an investigation is launched. (A forensic image is a copy of a computer's hard disk.)

"Usually, when something bad happens, it doesn't happen right away," Jones explains. In fact, it can take six, 12 or even 24 months before it comes to light. Yes, there is the added expense of taking the image, he says, but you have to offset that with the potential cost of litigation. ■

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The Economy Takes A Toll on Security

As the company's losses mount, more **budget cuts are required,** so our manager scrambles to **save his employees' jobs.**

FINANCIALLY, things have gotten really bad around here, even worse than I expected — and as a security manager, I always expect the worst.

We all know the economy is gasping for breath (some would say you can hear the death rattle), and the repercussions are hitting my company hard. Our CIO has been meeting with each IT manager in emergency sessions to find ways to drastically cut costs so that we can try to avoid (or at least delay) major layoffs. Financially, our boat has been leaking for a while now, and we've been bailing out the water with some pretty small buckets.

Our response to the crisis up to this point has been to cut our 2009 budget and try to be fiscally responsible. But now, the pace of our company's overall financial losses has accelerated, and our metaphorical boat has started sinking fast.

I've had to make sacrifices when putting new security capabilities in place this year. But now, I need to find ways to cut significant costs from our existing security expenditures in order to avoid cutting staff.

And we're talking about a very short time frame. In the next two weeks, I'll have to cut several hundred thousand dollars from my department's expenses or else eliminate that amount of money in staffing and payroll costs. What a terrible situation to be in.

My department is already being run by a skeleton crew. We haven't been able to hire anybody since the middle of last year, and staff attrition has left me with no duplication of skills and only the bare minimum of people to run the basic security operation. Any further staff reduction would be devastating to our security department. I honestly can't envision how we'll be able to continue providing the level of protection our company needs with any fewer people.

■ My department is already being run by a skeleton crew. We haven't been able to hire anybody since the middle of last year.

STAYING IN-HOUSE

We do have a couple of third-party services we're paying for, and the contracts (luckily, I guess) are coming up for renewal soon. So I'm hoping that if I decide not to renew our outsourced security services, we'll be able to save enough money to satisfy our department's cost-reduction target.

That's not something I'll do gladly, because we're already way behind where I think we should be in terms of our corporate security posture. But I'd rather take a big step backward by coming up with cheaper in-house approaches than lose the people on my staff who have done so much to build our current security capability. We've invested a lot in these people, building the knowledge base and skill levels that they have today.

Trouble Ticket

AT ISSUE: The security budget is being slashed by hundreds of thousands of dollars. There's a mandate to cut expenses or prepare for layoffs.

ACTION PLAN: Try to eliminate third-party contracts and keep the skeleton crew that's in place intact.

Ultimately, security is not just about protecting information; it's also about protecting people. In fact, some would say that protecting customers, partners and employees is the most important part of a security manager's job. Protecting my employees is at the top of my list, so I'm going to do what I can, and I just hope it will be enough.

There is no question in my mind that my company is about to have a massive layoff. I have a bad feeling that my team won't escape unscathed. And being forced to choose who to cut from my already devastated team is going to be like choosing which arm or leg to cut off of my own body.

This is ultimately the worst part of the responsibility of management. I've had to do it before, and I hoped never to have to do it again. But it looks like there's just going to be no escape.

For now, I'm going to try to stay positive and hope for the best. ■

This week's journal is written by a real security manager, **"J.F. Rice,"** *whose name and employer have been disguised for obvious reasons. Contact him at jf.rice@engineer.com.*

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Paul Glen

Tofu and Grapefruit

WHEN CONSTRUCTING project and management teams, I've always found that it's important to pay attention to more than just the tasks that need to be accomplished. The personalities of the people who would accomplish those tasks influence the success or failure of the team as much as the skills that they bring. But in times of emotional stress, such as the challenging times we're in today, personalities become even more important than they are during ordinary times.

For managers just trying to get things done in this difficult environment, it might be tempting to pay attention to skills alone, assuming that pressures on budgets and schedules will persuade people to put their personality differences aside and focus on completing the tasks at hand. Unfortunately, nothing could be further from the truth. During times of stress, most people fall back on old patterns of behavior, their comfortable, natural styles, rather than putting all their attention on the work to be done.

So, long ago, I developed a simple but useful way of looking at personalities to try to figure out how people will work together. I do it by evaluating people's personalities based on a simple linear scale. At one end of the scale is tofu, and at the other end is grapefruit. When you stop and think about the nature of these two foods, you'll see how it works.

Tofu, while a very healthful food, doesn't bring a lot of flavor to a dish. It adds a bit of texture, but it readily accepts the flavors of everything around it. If you douse it with soy sauce, it will taste like lumpy soy sauce. If you sauté it with garlic, it will taste like lumpy oil and garlic. But if you eat it by itself, it does have a subtle flavor. In other words, tofu is happy to be colonized by whatever surrounds it. It gets along with everything.

■ I developed a simplistic but useful way of looking at personalities to try to figure out how people would work together.

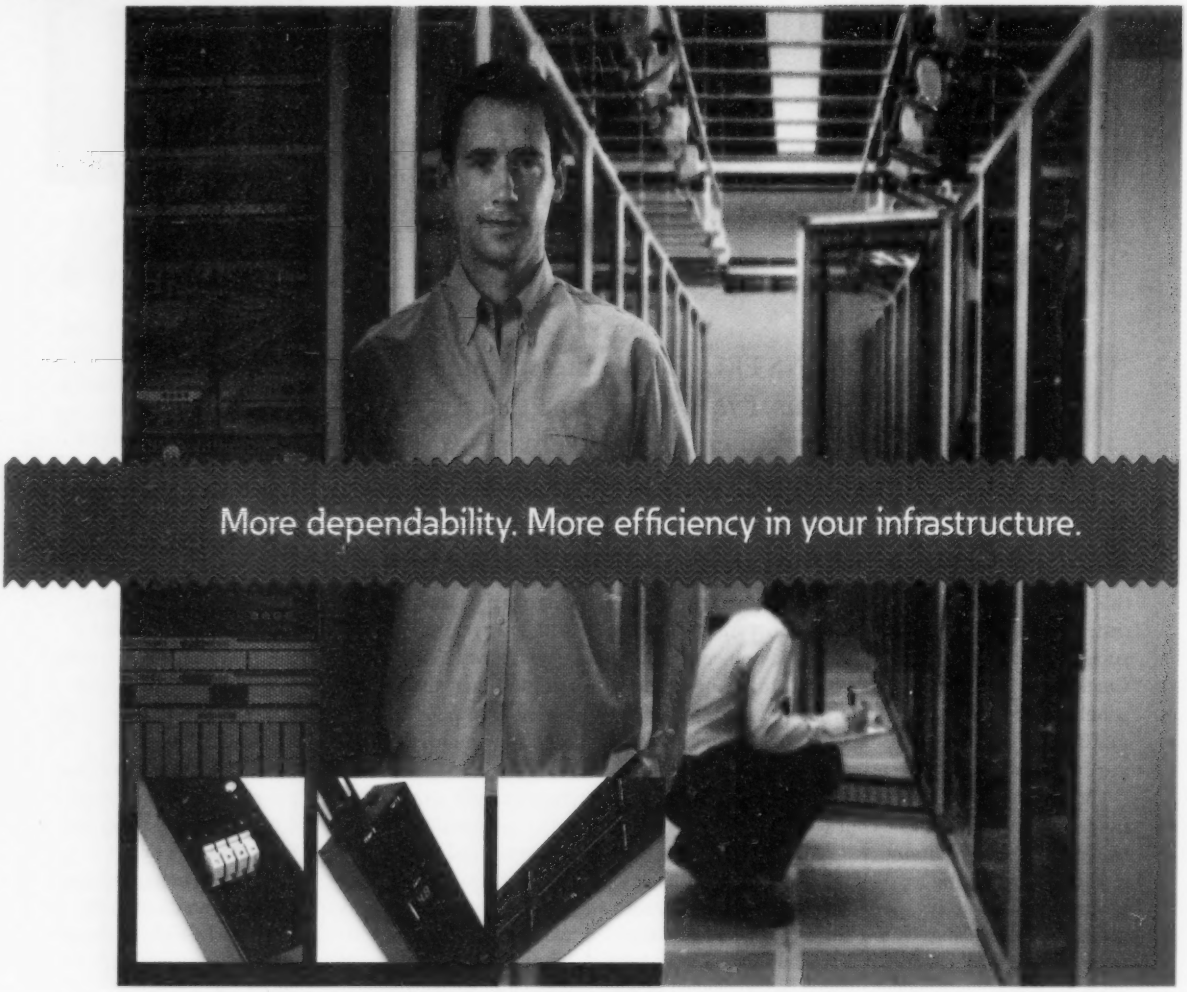
So it is with the tofu people. They are good and helpful people, hardworking and diligent, and they don't try to impose their work habits or personalities on those around them. In fact, they're happy to accept how others want to work, and they adapt to whomever they are working with. These are the people we sometimes forget are there, but they are always plugging along productively. They don't cause problems, and they don't demand attention.

Grapefruit, on the other hand, while also a very healthful food, demands attention. It has a very strong flavor, and you either love it or hate it. It never melds with the flavors of anything around it. In fact, quite the opposite. It insists that everything around it start tasting like grapefruit. If you've ever made a fruit salad, you've probably noticed that once you add grapefruit, the entire salad starts tasting of grapefruit no matter how little you put in. In other words, grapefruit is an imperialist fruit, insisting that everyone around it bend to its will.

So it is with the grapefruit people. They are good and helpful people, hardworking and diligent, but they demand that everyone around them work in the manner that makes them — the grapefruit people — comfortable. They have trouble adapting to other people's styles but work well with those who can adapt to their own.

So when constructing a team, you need to figure out the right blend of tofu and grapefruit. Too many varieties of grapefruit will fight with one another, but a team with no grapefruit at all may be like a bowl of tofu — bland and directionless. The key is to find the right recipe of skills and personalities that will blend well together. ■

Paul Glen *is the founder of the GeekLeaders.com Web community and author of the award-winning book* Leading Geeks: How to Manage and Lead People Who Deliver Technology *(Jossey-Bass, 2002). Contact him at info@paulglen.com.*



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Career Watch

PAY TRENDS: Not Universally Grim

THERE'S GOOD AND BAD NEWS in the latest quarterly update of Foote Partners LLC's IT Skills and Certifications Pay Index. The index, which looks at pay rates for 354 skills and certifications held by 22,550 IT professionals in the U.S. and Canada, found that the recession has hit IT salaries. That's the bad news, and it's hardly unexpected. The good news is that pay for several skills is bucking the trend and continuing to rise.

"Clearly, an urgent demand for talent in several areas is eclipsing broad, knee-jerk reactions to reduce budgets and cut people, projects and purchases without thinking carefully about the consequences," said David Foote, the firm's co-founder and CEO. "Employers made mistakes in past downturns – huge miscalculations in the heat of cost-cutting that hurt them later on, limiting their options when the smoke cleared and the rebuilding started. It just shows how far IT management has come since they were in this position last time."

Managers have learned that it's not just about cutting spending, according to Foote. "It's about *how smart* they're spending what they have," he said.

STILL GOING UP

Foote Partners found that in the last three months of 2008, these noncertified skills showed pay increases at the following levels:

NetWeaver portals (SAP EP)	28.6%
PHP	16.7%
Mac OS X Tiger, Leopard	16.7%
ITIL	12.5%
Java/J2EE, SE, ME	11.1%
NetWeaver PI (SAP XI)	11.1%
Master data management	10%
Unified communications/messaging	10%
Database management	10%
Microsoft SQL Server	10%
Oracle Developer Suite	9.1%
SAP Solution Manager	8.3%
NetWeaver BI (SAP BW)	8.3%

PAGE COMPILED BY JAMIE ECKLE.

■ **Q&A**

Michael Kirven

The **co-founder** and **principal** of IT staffing and consulting firm Bluewolf Inc. talks about **keeping a job** and **finding another** in the current economic climate.

With the economy in the doldrums, what can an IT professional do to stay employed? First, they can keep their technology skills fresh and take advantage of training opportunities, such as free online courses and certifications. "Free" is important, though; this is no time to ask your employer for money.

Second, they can leverage their technology expertise to help their company perform better. For example, they might develop an application that helps the company's sales professionals. It's important not to be afraid to take the initiative with these sorts of ideas.

Third, stay positive.

Fourth, stay busy, and never say no to an assignment.

Isn't that good advice anytime? Yes, but it is easy to get complacent in good times. When times are difficult, these things can help you keep your job.

Advice like "stay positive" seems simple enough, but that can be tough to do in such a grim environment. How can we do that? I can't emphasize enough the importance of staying positive. Avoid the negative people in the office – they will probably be the first ones fired, but negativity is contagious. For that reason, you should also turn off the news during the day. The news on Yahoo, CNN [and] NYTimes.com is mostly negative and will distract you from your job.

And if you do all that and still lose your job, what should you do then? Make sure your résumé is concise and well written and contains all of your updated contact information. Then, make sure it is optimized for keywords by describing your skills precisely – .Net, for example. Post your résumé on all the job boards, such as Dice, LinkedIn and Monster, as well as the niche job boards, for jobs in financial services, media, etc.

Take advantage of recruiting firms. And when you meet with a recruiting firm, treat everyone with respect, because these are the people who could help you land an interview and a job. Recruiting firms will also work with you to optimize your résumé for the job boards.

Finally, in this highly competitive job environment, if you have an interview opportunity, let the prospective employer know you are available immediately. Don't say that you will be on vacation or only do interviews on Mondays. Make sure you are easily available and show a strong interest in the job; otherwise, you will lose the interview opportunity.

– JAMIE ECKLE

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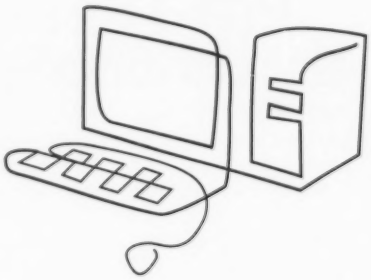

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Shark Tank

TRUE TALES OF IT LIFE AS TOLD TO SHARKY

Gee, Thanks

This network engineer pilot fish works at a regional government office where the domain controller is locked down by central IT. "Our domain controller has been flaky the past few days, so I called the help desk to let them know the server was down again and my users couldn't log onto the network," fish says. But the glum tech on the other end tells fish she can't put in a trouble ticket because "we're down." Is it the same problem? fish wonders. Tech's only response: "I can't tell you that, sir; we are down." So fish goes back to basics: Is your computer up? Do you have an IP? Can you resolve DNS? "It's amazing how difficult simple troubleshooting steps were for the person my users call when I'm not here," says fish. "In the end, she didn't want to look into the issue, since someone else was working on it. And once she had access to her systems, she opened a ticket and assigned it to one of my co-workers in another region that has no control over the server either."

Scope Creep

This company decides that it needs a better way of managing its software development, so IT picks a state-of-the-art development methodology from a big accounting firm. And it works very well. "Our CIO decided that it was so slick that it could be used to manage any project," says a pilot fish there. "He started strongly pushing it to all other areas of the company for their use. It got to the point where no managers wanted to meet with him. Eventually, he was let go. The methodology was still useful for software development, but we were forbidden to use its name. We worked hard to come up with other names and spent a lot of effort changing our work papers so that they did not even show the name of the product. Eight years later, it continues to be a useful tool – but we have to act like we thought up the stuff on our own."

Without a Net

Network switch fails, knocking out connectivity in this pilot fish's office. "While one of the administrators worked to replace the switch, I set up my personal laptop and external hard drive on my desk," says fish. "At one point, the admin came into the office, saw my laptop and said, 'That had better disappear unless you use the wireless network.' I told him, 'It's not connected to any network.' He pointed to the USB cord, with the slack neatly wrapped in a twist tie, and said, 'Then what's *that*?' I said, 'That's my external hard drive,' pointing to the huge aluminum box sitting beside the laptop. After he left, I sat down wondering why he would think I would plug into the wired network from a station with no network connection."

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Page number refers to page on which story begins. Company names can also be searched at computerworld.com

Accenture LLP 6
Amazon.com Inc. 16, 18
Apple Inc. 14
Arbor Networks Inc. 10
Bank of Montreal 28
Beth Israel Deaconess Medical Center 14
Black Data Processing Associates 4
Bluewolf Inc. 37
Brandeis International Business School 22, 24
Brandeis University 24
CA Inc. 14
CareGroup Healthcare System 19
CareGroup Inc. 14
Cisco Systems Inc. 6, 10
Citigroup Inc. 32
CNN 37
Cognizant Tech Solutions US Corp. 6
CommunityAmerica Credit Union 22
Cyber-Ark Software Inc. 30
Dice Inc. 37
Directions on Microsoft 16
eBay Inc. 22
Facebook Inc. 18
Foote Partners LLC 37
Forrester Research Inc. 16, 32
Gartner Inc. 12
Google Inc. 7, 16, 18, 26
Harleysville Insurance Co. 4
Hart Schaffner Marx 24
Harvard Medical School 14, 19
Harvard University 17
Healthcare Information Technology Standards Panel 19
Hewlett-Packard Co. 10, 14
Highmark Inc. 28
IBM India Private Ltd. 6
IBM 14, 17, 32
IDC 10, 14, 32, 33
Independent Oracle Users Group 7
Infosys Technologies Ltd. 6
International Ltd. 10
Internet Archive 17
J.Gold Associates LLC 14
Jam Industries Ltd. 14
Jones Dykstra & Associates 32
Larsen & Tubro Infotech Ltd. 6
Lawrence Berkeley National Laboratory 26
Lenovo Group Ltd. 10
LinkedIn Corp. 37
Mariposa Leadership Inc. 22
McKinsey & Co. 26, 28
Mformation Technologies Inc. 14
Microsoft Corp. 6, 7, 14, 16, 17, 32, 40
Monster Inc. 37
Mozilla Corp. 7
National Association of Computer Consultant Businesses 6
New England Health Electronic Data Interchange Network 19
Nortel Networks Corp. 7
Ogilvy & Mather Worldwide Inc. 28
Opera Software ASA 7
Oracle Corp. 7
Ouellette & Associates Consulting Inc. 24
PriceWaterhouseCoopers 10, 24
RBS Citizens Bank 32
RCA 16
Renesys Corp. 10
Research in Motion Ltd. 12
SAP AG 32
Satyam Computer Services Ltd. 6, 10
Siemens AG 21
Siemens Energy and Automation 21, 22
Society for Information Management 22
Sprint Nextel Corp. 32
Sun Microsystems Inc. 10, 32
Sunoco Inc. 22
Supro-Net Spol. SRO 10
Sybase Inc. 14
Symark International Inc. 32
Syracuse Research Corp. 4
Tata Communications Ltd. 10
Tata Consultancy Services Ltd. 6
TechCrunch 40
The Christian Science Monitor 17
The Long Now Foundation 17
The New York Times Co. 17, 37
The Nielsen Co. 6
Thoughtcorp.com 7
Twitter Inc. 18
U.S. Bureau of Labor Statistics 6
U.S. Federal Communications Commission 7
UBS Paine Webber 32
University of Florida 7
Uptime Institute 26
Virginia Credit Union 4
Wipro Ltd. 6
Yahoo Inc. 17, 26, 37
Zenprise Inc. 14

ADVERTISER INDEX

1&1 Internet 8-9
www.1and1.com
Autonomy 3
www.autonomy.com
Eaton Corporation 36
www.edpu.com/cw
ESET 11
www.eset.com
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www.fujitsudailyfurl.com
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hp.com/servers/virtual9
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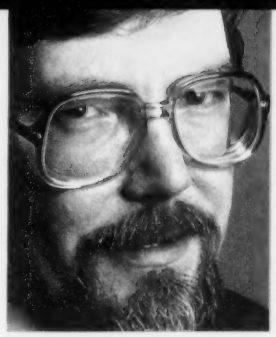
■ FRANKLY SPEAKING

Frank Hayes

Take It Back



IT WAS a huge embarrassment for Microsoft. Barely a month after the vendor's first big layoff ever, word leaked out that the company had overpaid some of the 1,400 laid-off employees — and was asking them to send some of their severance pay back.

But one nagging question remains: Was it bound to happen?

Seriously, all cheap-shot jokes aside — once the accounting error was made, was there a way to avoid a PR disaster?

Here's what happened: On Jan. 22, Microsoft announced 5,000 layoffs, of which 1,400 were immediate. In the weeks that followed, someone discovered that some employees got more money than Microsoft had planned.

This sort of thing happens, and apparently everyone followed Microsoft's standard procedure for such accounting errors, which includes identifying who was paid the wrong amount: 25 overpayments, 20 underpayments. So far, so good.

But Microsoft has never had a large layoff before. And no one seems to have realized that the standard procedure of asking for money back from employees who got, say, too big a bonus check wasn't a good fit for a situation where ex-employees got too big a severance check.

Thus, on Feb. 18, the letters went out, asking for the money back. On Saturday, Feb. 21, one of those letters was posted on the Web site TechCrunch, where it was spotted by mainstream news reporters. By Saturday evening, they had quotes from a tight-lipped Microsoft spokesman confirming that Microsoft was indeed asking for money back. Apparently, the spokesman didn't think he needed to warn upper management about the issue.

The reporters wrote their stories. Bloggers had a field day of their own with the news. And by Monday, Feb. 23, the story — and a tidal wave of bad publicity for Microsoft — had washed across not just the Internet but mainstream news outlets as well.

■ Why didn't anyone in the loop at Microsoft catch this before it became a fiasco?

It wasn't until late Monday afternoon that Microsoft's head of HR announced that the overpaid ex-employees could ignore the letters and keep the money. (Those who were underpaid will still get the money they were owed.)

Why didn't anyone — the accounting employees, the spokesman, anyone in the loop at Microsoft — catch this before it became a fiasco?

It's easy to say the accounting people should have seen the pitfalls of sending out those claw-back letters. But this was new to them. Besides, they were following their standard business process for overpayment cases. And the business process is there to be followed, right?

The world had changed. But the processes and people had not adjusted.

It's also easy to say that the spokesman should have spotted the crisis brewing. But Microsoft's public relations processes are also geared to a simpler world — one in which a blog can't blow up a minor HR glitch into the talk of the Internet over a weekend.

Look, we in corporate IT should understand this problem. Our job is to automate business processes. We know how long it takes to adjust them to new conditions. We're always trailing the real world faced by our users, so we need those users to make the necessary adjustments.

But we also want users to follow the defined processes unless they have the experience to spot a case where the process clearly won't work.

At Microsoft, the people didn't have that experience, and the process wasn't designed for that situation.

People or processes — which should have saved the day? Could either of them? ■

Frank Hayes *is* Computerworld*'s senior news columnist. Contact him at frank_hayes@computerworld.com.*

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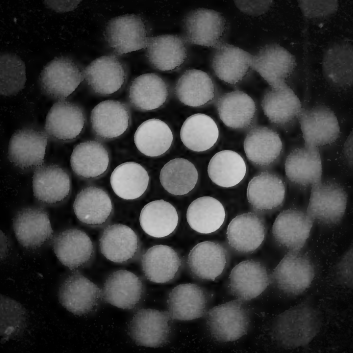

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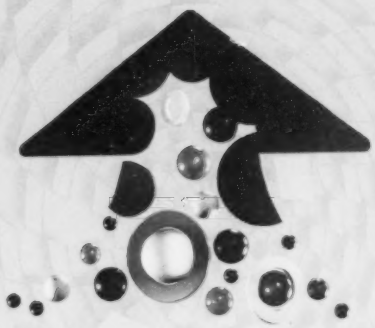

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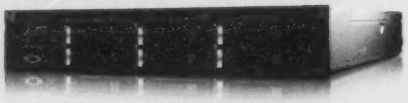

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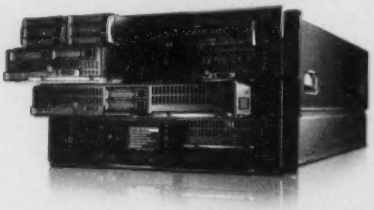

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